

Tips and Advice for Tropical Rainforest Fieldwork

based on an informal lecture I organised at University of Aberdeen in 2004,
much expanded in 2010-11 and updated thereafter
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The following is a small amount of advice about TROPICAL FIELDWORK which might be useful if you've never done anything like this before. I have done fieldwork stints in South Africa (Maputaland), Panama (Barro Colorado Island) and Malaysia (Sabah) which were not too long but still enough to enable me to put together the information here.

***** DISCLAIMER ***** *The following are advice and tips I've collected along the way that you can follow or not follow AT YOUR OWN RISK. I have not knowingly tried to mislead you with anything below, but even following the best of advice accidents can happen and I do not take any responsibility for any calamities that may occur as a consequence of following my advice. Use your common sense IN ADDITION to what I have here.*

Basics

Be sure to read the [FCO travel advice](#) for the country/ies you need to visit and if you're a person with disabilities, perhaps have a quick look at [this leaflet](#). IMPORTANT: [Do you need a visa for where you're going?](#) I'd also suggest you check out the [climate of where you're going](#): is it going to be hotter than you expect (consider taking a [keffiyeh](#) or [tagelmust](#) or similar)? Or perhaps it'll be bloody hot at midday but bloody cold at night (= you need to take a jumper and thick socks too)? For advice on basic things like sunblock and whether it's a good idea to order ice in cold drinks, salads or reheated meals, see [here](#) and see [this very useful map](#) which shows you how electricity plugs change around the world (more detail [here](#)). Search the web for advice on departure taxes and what's usual to tip in restaurants, etc. (e.g. I found [these tips about Peru](#) that way).

TRAVEL: Book **flights** using [SkyScanner](#) or [Expedia](#) or [Kayak](#) or there are [many similar sites](#). If possible, I always prefer **trains** (and specifically [the Indian train system](#) if you are there) UNLESS (of course) you're required to use a particular travel agent (see *Paperwork* below), in which case ignore all these options.

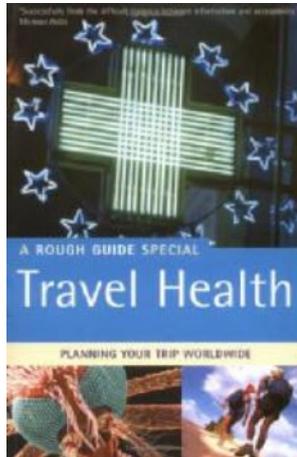
Going on a **FIELD COURSE** is a good idea: [Field Skills](#) do courses in the UK and Borneo (inc. [First Aid Training](#) and a [Tropical Forest Safety Course](#)) and check [this list of courses available at the Oxford OUCE](#) or [GVI](#) do Safari Field Guide courses in South Africa and I've heard good reports of [Moholoholo](#) (more relevant to savanna environments, presumably, but most of the advice will still be very relevant). For those going to a desert environment, you might like to read [this advice for the Gobi desert](#) (much more detailed than what I have here - even suggesting the rating for your sleeping bag!).

I have been on several fieldwork courses (e.g. a Field Skills one in Nov 2010) and some of the advice here has come from them. They're worth going on and you'll learn a lot more than you can pick up from reading a short text like this one.

Finally, you'll notice I've put a lot of web links into this text. If you find one that doesn't work any more, please email me on marthewst@gmail.com and I'll try to fix it. Thanks.

Medical issues

VACCINATIONS AND MALARIA. About **SIX MONTHS** before you're going to be there (yes - six months because some vaccination courses take that long), look up what vaccinations you need for the country/ies you'll be visiting. You can look up individual countries on the [NaTHNaC Traveller advice pages](#) or [FitForTravel](#) or get yourself a copy of [The Rough Guide to Travel Health](#) (or similar publication). More detailed information on unusual diseases can be found through [the CDC in Atlanta](#) or [the HTD in London](#), but check the more basic advice first. It takes time to sort out your vaccinations partly because certain vaccinations are 'live' and can't be taken alongside other ones and some vaccinations involve multiple shots with between a week and a month in between each (e.g. those for Japanese B encephalitis and for rabies).



You **MUST MUST MUST** educate yourself about the diseases prevalent in the areas you're visiting otherwise you may sorely regret it and/or end up seriously ill or - I don't exaggerate - dead. For example, malaria: you should know that the CDC keeps an up-to-date [malaria map](#) and Oxford University maintains [one specifically for falciparum malaria](#) (also see these [malaria myths & facts](#)). If you don't know the difference between *falciparum* malaria and other types of malaria, then NOW is the time to find out NOT while you're sitting in a field hut somewhere your mobile phone doesn't work and you don't speak the local language. If you're in the UK, most of these vaccinations are even [free on the NHS](#) so there's really no excuse not to have them (I personally made sure long ago that I had received all the vaccinations the NHS offers: why refuse a freebie?).

According to WHO guidelines 2010, artemisinin-based combination therapies (ACTs) are the recommended antimalarial treatments for uncomplicated *falciparum* malaria (see [here](#)). If you have been advised to take **Lariam (mefloquine)** as your malarial protection ([the CDC recommend it under certain circumstances](#) as long as [you do not have an underlying psychiatric disorder](#) - and it's widely available - e.g. [here](#) - but [U.S. Army guidelines](#) are more cautious), PLEASE be aware of the possible side-effects of this particular drug, e.g. read the section in the Rough Guide above on it and/or read [this](#). However, it must be said that many people DO take lariam and report no side-effects and it is still one of the leading drugs available for chloroquine-resistant malaria. If you do take it, make sure you have read the [FDA Lariam Medication Guide](#) (= the 'full, revised label' [here](#)), which includes a cut-out-and-keep 'information wallet card' on the last page to carry when you are taking it. Also, make sure you're aware at least in outline what the symptoms of malaria are (fever, shivers, temperature, flu-like symptoms, upset stomach).

BITES AND STINGS. **Land snakes** are not the only problem: **Scorpion** stings can be particularly nasty for children, **spider bites** can be necrotic or neurotoxic, hypersensitisation to **bee, wasp and ant** venoms is a common cause of anaphylaxis and there are aquatic venomous animals including **sea snakes** (Indian and Pacific Oceans between latitudes 30°N and 30°S), stinging **fish, jellyfish** and others ([Warrell 2007](#)¹). First piece of advice is to say these can all "be prevented by learning about local venomous fauna, wearing protective clothing, using a light after dark, and sleeping off the ground and under a bed net" ([Warrell 2007](#)), to which I'd like to add that if you are walking in a forest you should always wear closed shoes, avoid ever putting your hand inside cracks or holes which might conceal a snake and if crossing any fallen tree check it carefully underneath. Warrell (2007) recommends the following First Aid:

- REASSURANCE: even the most venomous species often bite without injecting enough venom to be harmful
- IMMOBILIZATION of the whole patient, especially the bitten limb [e.g. using [pressure-immobilisation](#) where you apply a firm bandage (as firm as you would put on a sprained ankle) over a folded pad placed over the bitten area]
- Transport of the victim to MEDICAL CARE as quickly, safely and passively as possible
- Traditional methods, such as incision, suction, tourniquet, electric shock, cryotherapy, instillation of chemicals, snake stone, are USELESS AND HARMFUL

¹ Warrell DA (2007). Venomous animals. *Medicine* 35:659-662.

- AVOID ASPIRIN or non-steroidal anti-inflammatory agents as they exaggerate haemostatic problems
- The snake is valuable evidence but should NOT BE PURSUED or handled carelessly

(I added the capitalisation). In addition to these, please DO NOT EVER be tempted to cut the victim in any way or apply a **tourniquet**, as explained [here](#). Also, I would NOT ADVISE to get a snake bite kit like [this one](#) (it comes with a scalpel and I feel this is too much of a temptation to cut someone and apply a tourniquet) and if you have been advised to buy snake/spider/other **antivenom**, BE AWARE that if the antivenom is not matched to the snake/spider/other that bit you, you can do yourself more harm than good *and* that antivenom is expensive *and* it has a limited shelf life (see [these comments about Aussie snakes](#)).

For learning about local venomous fauna, I suggest you start with [the Global Snake Bite Initiative](#) (includes country-by-country information) and watch some of [these BBC videos](#) (e.g. Stephen Fry meeting Komodo Dragons). If you think snakes are a possibility, I really liked the sensible advice on pp. 26-7 of [this pdf from Trinidad](#) which I hope they don't mind if I reproduce here (it is basically the same advice as Warrell 2007 above):

Most bites, even from venomous snakes, are not lethal. Dangerous complications from a snakebite are more likely to occur if the patient or those in attendance panic or if inappropriate treatment is given.

AVOIDANCE:

- Wear strong, high boots
- Wear long trousers
- Be careful when stepping over logs and into areas where there is a lot of leaf litter or ground cover.
- Do not try to clear away vegetation with bare hands
- Do not try to kill or capture any snake
- If you do spot a snake, alert the team and if possible avoid the area; if you cannot avoid the area keep an eye on the whereabouts of the snake
- If the snake is moving, stamping on the ground a short distance away will alert it to your presence and cause it to move away from the noise and vibrations.

IN CASE BITTEN:

- Do not panic: the snake may not be venomous; even if it is a dangerous species, its bite probably will not prove lethal.
- Try to identify the snake in question: memorise or photograph its markings. If the snake has been killed, keep the body, but handle the snake by the tail (the teeth can still inflict a venomous wound)
- Reassure the person bitten; let him/her sit or lie down in a secure, comfortable, shaded, place
- Remove all jewellery
- Wash the snakebite with soap and water
- Wrap a fairly tight bandage around the site if the bite is on the limb; this will slow circulation but not restrict it
- Immobilize the limb with a splint
- Do not cut the bite wound, do not try suction, do not apply a tourniquet
- If the wound or surrounding area is painful, take oral paracetamol at the standard dose; or cool the limb but do not apply ice directly to the wound
- Do NOT take aspirin
- Drink fluids (water) but no alcohol.
- Do not be convinced to drink anything else such as any anti-snake bite remedy
- Get the person to a good hospital as soon as possible;
- If necessary carry him/her out on a stretcher made out of 2 poles cut from small trees and tarpaulin or sheeting; walking could encourage the spreading of venom
- En route to hospital, telephone them and tell them that you are coming. Explain briefly the circumstances. Take the dead snake with you: handle it by the tail or in a box or bottle.

Finally, it is a myth that you can neutralise wasp and bee stings with acid (e.g. vinegar) and alkali (e.g. bicarbonate of soda), respectively, as you can read [here](#).



By the way, **I am NOT trying to put anyone off doing fieldwork in the Tropics (!)**: if you are fully prepared then it's as safe as, say, rock-climbing or SCUBA diving. Climbers and divers would think you were crazy to do either of those without educating yourself about hypobaropathy or DCS and the comments above are simply advice along the same sort of lines, OK?

Oh yes: for the NON-life-threatening things like blisters & cuts, you should get yourself a 'Savvy Traveler' basic medical kit from [Adventure Medical Kits](#) (US, pictured) or [an Adventure Medical Kit](#) (UK) or something similar. You could also just assemble your own kit at the local chemist/pharmacy or [here](#), perhaps following the list on p. 256 of [this book](#) or the list in *Equipment list* below.

Paperwork

If doing fieldwork through an organisation (e.g. a university, an institute), find out whether there are any paperwork requirements. For example the rules at the [Oxford University Centre for the Environment \(OUCE\)](#) are that all members of the University (including visitors and any volunteers you are in charge of) must fill out a [RISK ASSESSMENT FORM](#) and a [TRAVEL INSURANCE FORM](#) to be covered by [University insurance](#) for all work-related travel and fieldwork (whether human or physical, whether in the UK or overseas, whether in rural or urban areas (esp. if entering private property is required), even if activity is only overnight). The necessary procedures are described in detail [here](#) and [here](#). Risk Assessment forms must be submitted to the Finance Department at least **FOUR WEEKS** before you travel, or **FIVE WEEKS** before if the [FCO](#) advises against travel to your destination. If you are in charge of any volunteers, it's helpful also to append a covering letter explaining who each volunteer is, the relationship between him/her and Oxford University and what she/he will be doing, who will be supervising him, who will be covering their costs and how this will add to the project (the university will assess this information and decide whether it is possible to insure each volunteer) (also see *Groups in the field* below). Once you have the insurance cover, *make a note of the emergency numbers and the policy number and have them about you at all times during fieldwork* (get them from your Summary of Cover which ought to be similar to [this example](#)) and read their [pre-travel advice](#).

Oxford University maintains a [Travel Clinic](#) that you can visit for advice (only open on Monday afternoons 2-5pm (in [the Occupational Health Department at 10 Parks Road in Oxford](#)) and you must fill out an [Appointment Request Form](#) to be seen; the Occupational Health people also have their own [Travel Tips website](#) too, by the way).

Don't forget that, if you're intending to claim travel expenses, Oxford Uni requires that all your travel tickets are booked through one of their preferred travel agents (either the ones [listed here](#) or [the Oxford Travel Agency](#) (the OTA is open Mon-Fri 9-5pm; Suite 29, Westgate Centre, Oxford OX1 1NZ, tel: 01865 241141, fax: 01865 794611, sales@oxfordtravel.co.uk) - all of them can also advise on visa issues, etc.), so your first step should be to use [this form to get a flight quote](#).

Lastly, if you're buying equipment, Oxford Uni prefers you to use one of their [approved suppliers](#) because it often turns out cheaper in the end so please check them out before buying anything.

Transporting equipment or samples

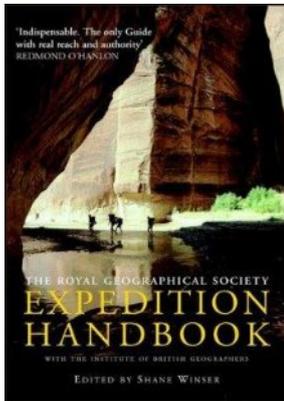
On the subject of paperwork, all equipment taken outside the UK must be accompanied by a Declaration of Contents in both English and the language of the country concerned (ask for a template of this letter, fill in the details and send it back for approval) and you may need both an export permit and a UK (DEFRA) import permit to bring samples back from the field. Fieldwork abroad nowadays frequently involves you transporting equipment (usually by air) so you also need to know about hazardous goods regulations. If you think that any of your equipment (inc. chemicals, batteries) might be hazardous then you'll need to be carrying appropriate paperwork with you (e.g. at check-in). First step, read [these FAQs](#) (mirrored [here](#)) which should tell you whether what you have is hazardous.

If hazardous: Once you have established the type of hazard (corrosive, explosive, etc.) at the end of the [IATA Book](#) there is a section which tells you the quantity you are allowed to transport by air and the type of package including the [labels](#) to be used, and the package should also be accompanied by a dangerous goods note which can only be signed by someone who is IATA trained.

If not hazardous: It's probably a good idea to contact the company which sold you the item and ask them whether they can send you a 'to whom it may concern' letter confirming that the item is non-hazardous (preferably both in English and the language of the country you'll be entering) (e.g. [this](#)), or, if not possible, ask your Department for a standard letter and add an equipment list to it. Specifically for Brazil, [these pages](#) describe the procedures/legislation that you need to know and do if you want to collect/transport biological material (Portuguese only).

Groups in the field

If you're in charge of **A GROUP OF PEOPLE** heading into the forest, there are several extra things you'll need to consider. Does anyone in the group have a medical condition you need to be aware of (e.g. diabetes, epilepsy) and are their needs catered for (e.g. insulin and is there a fridge to [store it in](#) at the field centre)? Do you know who is trained in first aid in your group? Do you have a list of everyone's full name, passport number and home/emergency contact with you at all times (preferably on a laminated sheet of paper) in case you need to call an insurance company? (If someone is temporarily incapacitated and you must arrange evacuation from the field to hospital, the insurance company will ask you for this information *before* they authorise any evacuation). Do your fieldwork preparations fulfill the requirements of [British Standard BS8848](#)?



If you're dividing up into smaller groups temporarily, plan beforehand so that you can (a) divide the first aiders and local guides sensibly between subgroups, (b) impose a minimum subgroup size of 5 (if possible) so that in the event of a casualty 2 can go for help and 2 can stay with the victim and (c) get some [walkie-talkies](#) in case you need to find each other quickly and there is no mobile phone network (n.b. range of these is up to 3 km but substantially less in a forest).

However, if you're organising big groups for a full expedition, then you're really going to need a lot more advice than what I can give you here: consider getting yourself a copy of [the Royal Geographical Society's Expedition Handbook](#).

Summary equipment list

It's useful to have a checklist. The following is mine, though there are others online worth checking out like [this one](#).

So: you've done the vaccinations, the paperwork and recovered from the flights. Now you're actually there and can see and hear the rainforest in front of you. Hopefully, you're not just standing there in shorts and a T-shirt !

The following is probably the minimum amount of stuff you should have about you before heading into the forest (thanks to [Sarah H. Luke](#) who thought of a lot of this stuff too and added some tips I hadn't thought of):

- Wear **fell-running shoes** (good grips & lightweight) or perhaps gumboots/wellies with good grips (suggest to store upside down at night to avoid beasts; I find 'Adidas' **kampungs** uncomfortable and they wear out quickly (and aren't available for UK size 9 or above); hiking boots have good ankle support but get **too heavy when wet**) and for socks I suggest **long socks** you can tuck your trousers into (e.g. light rugby socks) with (if need be) **leech socks** underneath and underneath all that I wear ankle socks (which I change every day). SHL suggests "I would recommend bringing fell-running shoes with you. **Inov-8 Mudclaws** are the right kind of thing, and I've found they're very comfortable, have great grip and dry out quickly in the sun".

- A long-sleeved **T-shirt** (e.g. a quick-drying **wicking top**, or another option is to have a short-sleeved T shirt and bring in a long-sleeved collar shirt which gives you more flexibility when it's very warm and no insects are about) tucked into long **trousers** (ideally quick-drying cargo pants + 2 spare pairs) tucked into your long socks (all loose enough to work in).

- **Insect repellent** on all tucks and over face, neck & hands (esp. ears & maybe on skin underneath clothes too) (which repellent? Well, I like roll-on **mosquito milk** or **Mosi-guard** even though others use sprays like **DEET/Autan** while walking (there is NO EVIDENCE, by the way, that DEET/Autan causes cancer according to [this](#)) and then back at camp I like to either use a less-smelly alternative or sit next to **mosquito coils** (here is [the CDC's advice on insect repellents](#)))

- A **waterproof clock/watch** (with an alarm, a stopwatch and a night-light; tie flagging tape to it because it will inevitably fall off once or twice)

- Perhaps a **machete** would be useful (if you are not in a strict conservation forest)

- In a small (20-30 L) **rucksack / daysack** (with a raincover or perhaps a **Gourdon dry bag rucksack**; remember when it's hot you WILL sweat through the back of your rucksack and also it CAN rain very hard and you'll appreciate a totally waterproof bag when those happen; see [this advice](#) for choosing a daysack):

Water (I take 1.5-2.0 L for a day's work but some people regularly take up to 5.0 L; also take some **water purification tablets** for emergencies). Your water should either come from bottles bought in a shop (check the seal on the bottle before you buy to check it hasn't been refilled) or tap water that is safe to drink ([this map](#) shows whether the country you are in has safe tap water and if not, invest in purification tablets or get into the habit of boiling all your water for 3 mins (see [this advice](#))).

A **headtorch** & spare batteries (better to get rechargeable batteries & a recharger)

SHL suggests a **sun hat and sun cream**

More insect repellent

A pocket **compass** and/or a **GPS**

A fold-away **knife** (or penknife)

A **camera** (if possible, with a good zoom lens)

Sample bags (and put your camera in one)

A **lunchbox** (with lunch inside it !)

A sat phone/**radio** (if doing night work or working on your own)

First aid kit (see above; suggest you put the contents in sample bags too). SHL suggests this should be water proof and contain [at least]: sterile dressing, plasters, tape, bandages, antiseptic cream, lots of water purification tablets, rehydration sachets, anti-fungal cream for feet/athlete's foot cream, savlon and antihistamine tablets.

and perhaps a **poncho** (this is really climate-dependent, however: it's heavy and if rain is generally not cold then you probably won't use it. but in other places you might find it indispensable)

- In a **waterproof document-holder** (e.g. a [map case](#) or perhaps a [WeatherWriter](#)):

A **pen/pencil and notebook** (by the way the deal with [waterproof paper](#) is that it works and it's great but I'd still keep it in a waterproof holder)

A **trail map** (preferably laminated)

Your travel insurance may require you also to carry a photocopy of your **passport photo page** and a contacts card with essential telephone numbers like the field station, the local hospital (*actually call it before you go to check it works!*), the helicopter rescue (*call this number before you go and find out what the response time is for your specific area*), the emergency line of your insurance company (and the policy number they'll ask you to quote if you do call) and your home/emergency contact number.

- If you have a medical condition you'll already know all about **Medical Alert ID tags** but consider getting one made with information printed on it in the local language.

- Perhaps this is a good point to remind you that you will also need **camp stuff**. SHL suggests "A microfleece/warmer layers (you definitely want extra layers for cooler evenings), Trousers (it gets cool in evenings and there are lots of biting insects), Shorts for hot days-off sitting in camp, Flip-flops/sandals and perhaps another pair of shoes for camp, Swimming kit, Towel, Sleeping stuff: Sleeping bag liner, Thin sleeping bag (if you feel the cold easily), Carry mat/thermarest to insulate your hammock (Also useful if you will be visiting far away sites where you'll have to camp), Pyjamas (again, it can get cool at night), Sarong (useful as spare blanket, towel, item of clothing, etc.)".

- Also, back at camp, don't forget your **toiletries** (SHL suggests alcohol hand gel, nail scissors, vaseline, moisturiser, anti-bacterial soap) and if you'll be in a place without a washing machine for a while you'll need some hand-wash soap, easily-washable clothes (i.e. definitely not jeans) and get a basic sewing kit. SHL also suggests a "Large clip-shut plastic box – if you're staying a while it's worth investing in one of these to keep insects/rats off food and your stuff".

... and after all that, if this is not just a sight-seeing walk then you'll also need (of course) **whatever equipment you need to actually do the job you came to do** in the forest!

If in Central/South America, read [these ways to avoid chiggers](#) and if in Asia wear [leech socks](#) if there are [leeches](#) about (a good tip is to make sure that you never sit down just on the ground in the forest: minimise beasties by either sitting on logs or taking a minute to make a little seat of leaves each time).

Also, accept that you're going to sweat all over and get bitten THROUGH your clothes (just have a good shower afterwards (if possible), check yourself for ticks & leeches and use something like [calamine cream](#) or tiger balm to stop the itching). If you have one, remember to store your camera/laptop/binoculars in silica gel / a dry room / a tupperware full of rice overnight after you're done. SHL suggests you get "A second small rucksack /bag that stays clean. Your field rucksack will very quickly become too filthy/sweaty for you to want to take it into town, etc." and getting "Dry bags – lots, in a variety of sizes – for keeping clothes and electronics dry" and duct tape for general mending.

That's about all I can think of - Enjoy your time in the rainforest!!

Toby