Geology Field Health and Safety plan

Planning template

This template can be used by Supervisors, team leaders, and team members to create a safety plan for all field research trips. Supervisors should review this plan with team leaders and members before field research begins, and team members should have copies of the plan during field research.

Research team information	
Project title	
Supervisor *(Name, phone number)*	
Team Leader *(Name, phone number)*	
Field Team Members *(Names, phone numbers)*	
Travel Date(s)	
Planned activities *List proposed activities briefly*	
Trip check-in/check-out contacts *List names and contact information for 2 PSU employees not on the trip*	
Frequency of check-ins? *Daily Other?*	
Is anyone working alone? *Yes/No? Names*	

Communication plan	
Pre-trip meeting *When and where will the team meet? Will you meet in person? Use this document as a template for your meeting agenda*	
Communication while in field *Provide field contact information for each team member [cell phone number, satellite phone number, CB radio or walkie talkie channel, etc.) If cell coverage is unreliable in parts of the field site, provide information on where best service can be found*	
Team check-in plan *How frequently will team members check in with one another? What devices will you use? Who is responsible for checking in? What is the protocol if a team member cannot be reached?*	
Pre/debrief plan *Will you hold daily briefings and debriefings? What items will be discussed (work plan, stop-work schedule, field hazards, food/water, etc)?*	

Research site information			
Field site geographic location *Name of location, geographic coordinates.* **Link to online map**			
Is the field site new?	Yes / No	**If no, names of previous investigators**	

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Specific site information *Elevation, terrain, environment, lakes, rivers or forests*	
Access to Shelter/Drinking water	☐ Plumbed water available ☐ Bottled water provided ☐ Cabins /Labs ☐ Tents ☐ Vehicle with A/C
Nearby facilities *Name, distance, hours of operation* *If not, where is the nearest service area?*	☐ Restrooms ☐ Gas ☐Firewood ☐ Store ☐ Other:
Travel and access *List typical access roads and alternate routes*	
Environmental risk factors *Describe any environmental conditions (terrain, plants, animals, disease vectors) that create a risk. Describe safety measures planned.* *List any specialized safety equipment needed (e.g., bear spray, rifle…)*	
Human interaction risk factors *List any potential risk factors from the locals or criminal groups and briefly discuss management plans.*	
Weather risk assessment and management plan *Identified weather risks: Extreme cold, extreme heat, lightening, flooding* *What are the conditions under which field activities at the site should be canceled?* *Briefly discuss safety measures to reduce risk and emergency plan in case of an emergency*	

Emergency services and contact information	
Field site contact *Name, address and landline phone number of local institutions,* *Name of campsite, cabins, dorms* *Address, location and phone numbers*	
Institution Contact and other persons not participating in field team *Name of department chair, personnel manager, number, email of other department administration on campus, or other lab members*	
Nearest emergency medical services or hospital *Contact information for nearest emergency medical services. List the local full telephone number (not just 911) and provide an address. Attach a map of route from field site to medical facility.*	
Evacuation plan *List the identified evacuation plan in case of an emergency (driving, splitting up team…)*	
First aid training *List team members trained in first aid and CPR. Location of first aid kit, or who is carrying it. Brief description of any special components.*	

Field team health plan	
Physical demands *List physical demands required for this trip (hiking, climbing, wading, high altitudes, other)*	
Immunizations or prophylactics *List required immunizations/prophylaxis needed.*	
Medications *List any regularly taken medication that might need to be given in an emergency: epipens,insulin, nitroglycerine pills, allergy shots, asthma inhalers, other.* *List how they are carried and stored: refrigerated or room temperature*	
Food plan *What food will be provided, and what food will team members need to provide? Are there any dietary restrictions? Does each team member have adequate nutrition? How will food be stored?*	
Hydration plan *What is the water source? If necessary, how will water be treated for consumption? How will water be transported and stored?*	
Sleeping accommodations *Where will the team sleep? When is quiet time? Do any team members need special accommodations, such as private lodging, extended quiet times, extra bedding, etc.*	
Work site personal accommodations *Do any team members need physical, social, cultural, religious, or other accommodation for working at the site?*	
Substance use policy *What is the trip policy for using alcohol and other recreational drugs? Do any members have any objections to substance use? The trip policy must be acceptable to all team members*	

Hygiene plan *What bathroom, washing, and changing facilities are available? What is the procedure for storage/ disposal of human waste products, including feminine hygiene products?*	
Equipment, Activities, Permits	
Fieldwork transportation *What vehicles will be used during field research operations? watercraft, car, ATV.*	
Research activities *Detail the goal of field operations*	
Research hazards *Describe the potential research-associated hazards and hazardous materials*	
Research Tools *Describe any tools required for the work, including hand tools, power tools, heavy machinery, specialized tool, firearms.*	
Personal Protective Equipment *Describe and PPE **required** and PPE **recommended** to work at the site, including eye protection, hand protection, head protection, footwear, flotation devices, etc.*	
Permits *List permits required for your field work. Note contact information for the permit issuer*	
Affiliation documents *What documentation do you have that identifies you as an affiliate of PSU? (documents on letterhead, business cards, ID card, etc)*	

Emergency Contact information	
PSU Campus Safety Off-Campus Emergency: 503-725-5911 Non-emergency: 503-725-4407	**Personal Insurance information:** Carrier: Insurance ID: Hospital ph#
PSU Environmental Health & Safety]: 503-725-3738 EHS-group@pdx.edu **Student/trainee injuries** Student Health and Counseling (SHAC) 1880 SW 6th Ave. Portland, Suite 200 https://www.pdx.edu/health-counseling/health 503-725-2800 **Staff/faculty injuries:** 503-725-4945 http://bit.ly/psu-injuryreport	

Supervisor and Team Leader Signature: *I prepared this Field Safety Plan and reviewed its contents with all team members.*

Name (printed)	Signature	Date

Field Team Members: *I read and discussed this Field Safety Plan with my Supervisor and Team Leader, I understand the outlined risks associated with this field research, and I understand the process for mitigating risks as outlined in this plan.*

Name (printed)	Signature	Date

Fieldwork supplies

Essential Field Gear

- ☐ 10x hand lens
- ☐ Rock Hammer and safety glasses (prescription glasses OK)
- ☐ Brunton Compass
- ☐ Two (2) field notebooks (see p. 2)
- ☐ Two technical pens (widths: 0.25mm, 0.5mm)
- ☐ Mechanical pencil (0.5mm) - 2 recommended
- ☐ Replacement pencil lead (0.5mm)
- ☐ Stick-style eraser
- ☐ ruler-protractor
- ☐ Sharpee/permanent marker
- ☐ Set of colored pencils (at least 12)
- ☐ Clipboard or Map Case
- ☐ Graph paper (10 squares/inch) Pocket knife (2-4” blade)
- ☐ Personal first-aid kit, including any personal medications (communicate these to trip leader)
- ☐ Sturdy field boots - no open-toed shoes
- ☐ Two 1-liter water bottles
- ☐ Waterproof-breathable jacket or parka appropriate for the season
- ☐ Long pants (light weight in summer, heavy weight other seasons)
- ☐ Long sleeve shirt for sun protection (light weight in summer, heavy weight other seasons
- ☐ Sun or warm hat (seasonally appropriate
- ☐ Sun glasses
- ☐ Sun screen (SPF 30 or greater)
- ☐ Wrist/pocket watch/phone
- ☐ Field back-pack
- ☐ Field belt – w/non-magnetic buckle (to carry compass/pouch/etc.)

Recommended Field Gear

- ☐ Wind/rain pants (essential in winter and shoulder seasons)
- ☐ Large waterproof garbage bag for pack
- ☐ Leather work gloves
- ☐ Hammer holder for belt
- ☐ Field pouch
- ☐ Small binoculars
- ☐ Camera (or phone)
- ☐ Photo scale
- ☐ Safety pin (for marking maps/photos)

Camping gear

Essential Camping Gear

- ☐ Duffel/backpack
- ☐ Field clothing
- ☐ Underclothing & work socks (avoid cotton)
- ☐ Cold-weather clothing layers (sweaters etc.)
- ☐ Warm hat
- ☐ Warm jacket appropriate for season
- ☐ Warm gloves or mittens
- ☐ Toiletries
- ☐ Prescription medicines, contact lenses, other personal health needs
- ☐ Sleeping bag
- ☐ Tent
- ☐ Towel/washcloth
- ☐ headlamp/flashlight & batteries

Recommended Personal Gear

- ☐ Camp/town clothing
- ☐ Comfy camp shoes
- ☐ Reading book, stationary, stamps
- ☐ Travel alarm clock/phone
- ☐ Camp chair or stool

Optional Personal gear

- ☐ Laundry bag & detergent (if facilities permit)
- ☐ Musical instruments (compact)
- ☐ Compact toys/games (frisbee, ball, fly rod, cards, slackline, etc)
- ☐ music and headphones
- ☐ a good book

First aid supplies

Single use / consumable items

Hygiene & Antiseptics

- ❏ Alcohol wipes/antiseptic towelettes
- ❏ Iodine
- ❏ Nitrile gloves
- ❏ Hand sanitizer

Bandages & wound coverings

- ❏ Cloth tape
- ❏ Moleskin tape
- ❏ Adhesive bandages (bandaids) - multiple sizes
- ❏ Sterile gauze bandages
- ❏ Roller bandages
- ❏ Absorbent compress
- ❏ QuikClot bandage
- ❏ Sterile wound closure strips

Medications and ointments

- ❏ Antibiotic ointment
- ❏ Oral antihistamines (Benadryl, Zirtec, Claritin)
- ❏ Topical anti-itch lotions (hydrocortisones, Calamine)
- ❏ Oral pain relievers (Ibuprofen, acetaminophen, Naproxen sodium, and/or aspirin)
- ❏ Anti-diarrheal medicine - Diamode, Imodium, or any other Loperamide product
- ❏ Antacids like pepto-bismol or Maalox
- ❏ Eye wash (saline or eye drops)
- ❏ Ammonia inhalant ampoules

Other

- ❏ Oral rehydration salts
- ❏ Instant cold packs
- ❏ Instant heat packs
- ❏ CPR mask
- ❏ Duct tape
- ❏ Superglue

Reusable items

- ❏ Waterproof carrying case for first aid kit, ideally unzips and lays flat
- ❏ Wilderness field medicine guide such as:
  - ❏ Wilderness Medicine Handbook
  - ❏ Field Guide to WIlderness Medicine
- ❏ Wilderness and Remote First Aid Emergency Reference Guide and Pocket Guide
  - ❏ NOLS Wilderness Medicine Pocket Guide
- ❏ First aid scissors and EMS shears
- ❏ Miscellaneous forceps and fine point tweezers
- ❏ Pencil + Paper (Rite in the Rain or similar preferred)
- ❏ Irrigation syringe
- ❏ SAM splint
- ❏ ACE bandages
- ❏ Tick-twisters
- ❏ Thermometer
- ❏ Hand mirror

Items requiring Prescription or training

- ❏ Epi-Pen
- ❏ Tourniquet

Note: This is a basic list and not intended to be comprehensive. Depending on the nature of field research, supervisors may supplement this basic field kit with more specific supplies to fit their needs. Supervisors may include considering the field site's proximity to fires, hunters, and length of trip.

Preventing injuries

The most important first-aid action you can take is *active prevention.* Use the planning form to identify foreseeable hazards and strategies to minimize their risks. The most common field injuries and their *prevention* strategies are:

- Dehydration / heat illness
    - **Always be willing to stop** work temporarily or for the day.
    - Acclimate 2 weeks before the trip - exercise in the heat!
    - Make sure the team is equipped with appropriate sun protection, including full-coverage clothing and hats. Bring a shade tent if no shade is available.
    - Learn the signs and symptoms of heat exhaustion and heat stroke. H*eat exhaustion* should be treated immediately, and work stops for the day. *Heat stroke* is a medical emergency - immediately call 911 or InReach.
    - Drink 3-4 L of water per day for light-duty work, and 1L per *hour* for intense activities or hot field sites. *Caffeinated beverages do not count*.
    - Hydrate at camp or the car *before* heading into the field.
    - On long days, carry some way to purify water.
    - The best indicator of good hydration is urine output - everyone should urinate every 2-3 hours; output should be light yellow to clear.
    - Dehydration often causes headaches and irritability. Treat a headache or grumpiness with plenty of water *before* taking a pain reliever.
    - Rehydrate with ½ - 1 L of water 1-2 hours before bedtime.

- Blisters
    - **Be willing to stop** the group so one person can care for their feet. Don't encourage anyone to wait until the "next convenient spot."
    - Pack an extra pair of dry socks even on day trips.
    - Learn to treat blisters. Carry tape and moleskin at minimum; "2nd skin" or similar is recommended
    - Take care of "hot spots" *before* they become blisters - cover with cloth or other tape to prevent rubbing.
    - Take the tape off at night to allow skin to dry.
    - Treat with moleskin quickly if a hot spot remains painful

- Twists/sprains/falls
    - Make sure everyone has adequate footwear before leaving Portland.
    - Ask each team member about prior or ongoing joint injuries before leaving Portland. Don't hike on rough terrain with a pre-existing injury!
    - Hike at a pace that suits the *slowest team member*. Take breaks as needed.
    - Make sure each person's pack fits comfortably and weighs a reasonable amount.
    - If off-trail travel is necessary, walk slowly.
    - Don't take shortcuts, especially switchback shortcuts.
    - Consider using hiking poles.

First aid for minor injuries (no threat to life or limb)

1. Take a deep breath
2. Make sure the scene is safe
3. Ask the injured party what happened, and have them point out all injuries
4. Pull out the field or vehicle first aid kit
5. If possible, have the injured party apply any medical supplies needed
    a. have them wash their hands and wounds before applying bandages
    b. wash your hands, put on gloves, and assist them as needed
6. If wrapping or splinting an injury, check periodically to make sure circulation is adequate (no tingly/numb toes or fingers). Loosen wrapping if necessary.
7. Make sure the injured party is hydrated, warm, and fed.
8. When in doubt, cancel field work and evacuate to urgent care.

First aid for a medical emergency (any serious threat to life or limb)

1. **Only approach the patient if the scene is safe.** You are no use to the injured party if you are also injured. Put on protective gloves right away.
2. **Take a deep breath.** Fixing mistakes takes more time than doing things slowly and correctly.
3. **Call emergency services (911 or InReach)**. Use your GPS unit, phone, or map to provide location coordinates to the dispatcher. The dispatcher will walk you through a list of signs/symptoms and will arrange for an evacuation. If you are unable to contact emergency services, your first priority is to stabilize the injured team member.
4. **Stop active bleeding immediately** by applying pressure and elevating the injured area, if possible. ***Never remove an impaled object.*** This could cause more severe bleeding; instead, immobilize the object as best you can.
5. **Do not move the patient** unless there is immediate danger
6. **Only provide treatments that you are certified to provide.** Don't make the situation worse! Oregon's "Good Samaritan Law" protects volunteer responders from liability as long as you are acting within the limits of your training.
7. **Check and record heart rate and breathing** rate by using a watch or phone to time.
8. **If you are CPR trained,** give CPR immediately if you cannot feel a pulse. Stop CPR if you become exhausted - do not become another patient!
9. If the injured party is conscious, **interview them and take notes**. Record the team member's medical history, including allergies, medications, time and contents of their most recent meal, and any chronic medical conditions they can describe. Ask them to tell you their name, where they are, what day it is, and what happened to them, noting their responsiveness to questions or signs of disorientation.
10. **Only evacuate the injured party as a last resort.** If you are able to reach an emergency dispatcher, they can guide your decisions. If you cannot call emergency services, you will need to work with the field team to either send for help OR carry the injured team member to a road that is accessible to an emergency medical vehicle.

Field safety incident and near-miss log

Document any safety incidents that occurred during field research and give this completed form to your research supervisor. Incidents may include interpersonal interactions within field teams, interactions with bystanders or landowners at the research site, or other dangers encountered during the field trip. We provide an "Incident Log Cover Page" for quickly summarizing reports and an "Incident Cover Report Form" for gathering details about each incident. Supervisors may want to separate incident reports about interpersonal conflicts, to maintain privacy of those involved, or create separate Incident Logs for each field site or field season.

Incident Log Cover Sheet

Date	Name of researcher filling out report	Location of incident	Danger or threatening behavior?	Where was the report filed? (HR/EHS/Title IX)

Incident Log Reporting Form

Team information		
Person(s) claiming incident:		
Project Name:	PI:	Staff:
Team Member Names:		

About the Incident		
Research site location:	Date:	Time:

Did the incident cause any harm? Yes / No Were you concerned for your safety? Yes / No	What was affected: (Tick all that apply) ❏ People ❏ Property ❏ Environment ❏ Other:
If there were witnesses or mediators please include names and contact information (if available) here:	If you checked People above, please answer: Who was affected by or put at risk by the incident? (Tick all that apply) ❏ Staff ❏ trainee ❏ Public/visitor ❏ Land owner ❏ Contractor

Describe the incident in detail
Please provide information about relevant events leading up to the incident, what strategies or approaches were used to remedy the problem, and what follow-up actions need to occur.

Signature of person preparing the incident log Date

Field vehicle safety supply list

☐ **Papers and Permits**

❏ Accident Report Packet

❏ **Oregon Department of Motor Vehicles (DMV) Traffic Accident and Insurance Report form (subject to accident criteria on the top of the form)**

❏ **PSU insurance information - please contact Risk Management (johansed@pdx.edu) for this information**

❏ **Witness Cards - two in each packet**

❏ **Accident Information Form**

❏ Copies of drivers' licenses, certifications, or driver authorization forms (if applicable)

❏ Vehicle decals (even better with QR code that links to information about the researcher/project!)

❏ Multiple copies of research permits and/or letters on institution letterhead from department chair or faculty supervisor explaining research

❏ Paper maps, saved images from Google Earth, directions, GPS coordinates of sites and field lodging

❏ Vehicle repair manual

☐ Vehicle Repair & Tow Equipment (***Make sure you are trained in how to use this equipment!***)

❏ Jumper cables

❏ Car battery charger

❏ Spare tire (check to make sure it is inflated, useable) ❏ Roadside emergency flares ❏ Tire changing supplies:

❏ Tire gauge

❏ Car jack

❏ Tire iron

❏ Towing supplies for getting unstuck from mud or snow (don't forget instructions):

❏ Rope

❏ Winch

❏ recovery tracks (MAXTRAX or similar)

❏ snow chains

❏ shovel

❏ road salt, sand, or kitty litter (the non-clumping kind!).

Communication Equipment

❏ Charged cell phone, charger and connection cables

❏ Satellite phone and/or emergency beacon if traveling to an area with poor cellular service

❏ Shortwave-NOAA weather radio

❏ Waterproof bag for storing all electronic equipment

First Aid & Safety Equipment

❏ Flashlights, headlamps, and LED lanterns ❏ Basic toolkit containing: ❏ Pliers

❏ Screwdrivers

❏ Hex wrenches,

❏ Vice clamps

❏ Hammer

❏ Duct tape

❏ Super glue

❏ Bungee cords

❏ Zip ties

❏ Large plastic bags ❏ Personal protective equipment:

❏ Nitrile gloves

❏ Safety glasses

❏ Reflective vests

❏ Whistles

❏ High visibility ribbon roll/flagging tape

❏ Fire extinguisher or bucket of sand (for work in dry vegetation with any type of ignition source/spark)

❏ Space blanket, sleeping bag, and/or extra dry clothing

❏ Extra first aid kit

❏ Sunglasses and sunscreen

❏ Pocket knife

For VERY remote field trips

❏ Spare fuel

❏ Car oil

❏ Lots of extra water and water treatment kits

❏ Windshield washer fluid

❏ Hatchet or hand saw

❏ Spare batteries for communication devices (e.g., phone, satellite phone)

Boat Safety Equipment

❏ Spare oars or paddles
❏ Spare life vests
❏ Visual signaling devices (light flares, smoke, strobe lights, white flags)
❏ Sound signaling device (horn, whistle, etc.)
❏ Bailing bucket
❏ Anchor and line
❏ VHF radio