

Hazard Identification and Risk Assessment for Field Activities

Overview

This **Hazard Identification and Risk Assessment** procedure applies to all EOAS faculty, staff and students who are involved in off-campus field activities related to research or teaching. It forms part of the EOAS Field Safety Policy and is in addition to the UBC Travel and Field Safety Policies and Procedures (<https://travelfieldsafety.ubc.ca/about/>) with which all individuals engaged in field studies must familiarize themselves.

Description of Field Activity and Participants

Please provide in the space below a brief description of the fieldwork/activity together with the number of anticipated participants:

1. Critical components

(a) A comprehensive appraisal of the hazards to be encountered on field activities and an assessment of the risks associated with these hazards must be undertaken during the planning for the trip.

(b) Staff members in charge of field activities and supervisors of postgraduate students are responsible for ensuring that the risk assessment procedure has been completed and signed off before the commencement of the field activity.

(c) Following identification of the hazards likely to be found during the field activity, risk control measures must be adopted to minimise the risk associated with each hazard.

(d) Potential hazards and the control measures in place must be disclosed to all participants before departure.

(e) This document is only valid for the dates specified and the following conditions apply:

i) Activity and participants must remain the same. *Any significant variation to the activity or number of participants will require the Field trip supervisor to re-assess the risk and submit a new version. An addendum to the previously submitted assessment specifying the changes should be provided when minor changes to the submission occur.*

ii) The dates specified must be for a period of less than 12 months. *For ongoing (eg. long term project that spans several years) the Field trip supervisor is required to submit a new version each year).*

1.1. Hazard identification and risk assessment

To achieve a comprehensive appraisal of hazards during fieldwork it is advisable to incorporate the ideas of all participants and where appropriate stakeholders. A hazard considered as trivial to one participant may be considered significant to another. This diversity in hazard identification may result from variation in, personal experience, individual capabilities or bias associated with personal attitudes to OH&S.

Hazards may be site or task specific, they may be insidious or apparent and they have the capacity to affect individuals differently. The accepted method of 'Risk Assessment' is to score a hazard on the basis of 'Consequence' and 'Likelihood' (table 1). These individual scores are then used with the 'Risk Matrix' (table 2) to determine the level of risk; giving a score of high, medium or low.

Where the risk associated with a task/hazard is determined to be high or medium the task should not be undertaken unless the hazard can be reduced. In this circumstance a systematic approach known as the 'Hierarchy of Control' needs to be applied to the control of a hazard (table 3). The hierarchy is subdivided into 5 levels of control; the first level of control being 'Elimination'. Elimination aims to remove a hazard or hazardous work practice from a worksite. An example may be to remove a trip hazard. However, it is not always practicable or possible to eliminate a hazard and therefore the next control, 'Substitution' can be applied. An example of substitution may be changing from using a toxic chemical to a non toxic alternative.

Skipping forward to the final level of control; Personal Protective Equipment (PPE) is considered the lowest, least effective, control because

it assumes that the employee involve in a task will be exposed to some level of risk. Where long term exposure is likely PPE may not be sufficient in mitigating risks to employees.

Table 1, Defining categories of Consequence and Likelihood

Consequence	Description	Likelihood	Description
Major	Death or extensive Injury	A	Is expected to occur
Moderate	Medical treatment	B	Could probably occur
Minor	First aid treatment	C	Could occur but only rarely
Insignificant	No treatment	D	May occur but probably never will

Table 2, Risk Matrix combining elements of Consequence and Likelihood

		Consequence			
		Major	Moderate	Minor	Insignificant
Likelihood	A	H	H	H	M
	B	H	H	M	M
	C	H	M	M	L
	D	M	M	L	L

Table 3, Hierarchy of control

	Example
1. Elimination	Remove the hazard <ul style="list-style-type: none">• Asbestos: remove it from the building
2. Substitution	Use an alternative <ul style="list-style-type: none">• use scaffolding rather than ladders• quieter machinery for noisy models
3. Engineering Controls	Separation of hazard <ul style="list-style-type: none">• place a physical barrier around the hazard to exclude access• separate vehicle and foot traffic in warehouses
4. Administrative Controls	Change the work practice <ul style="list-style-type: none">• require employees involved in hazard processes to have certain rest periods, e.g. truck drivers
5. Personal Protective Equipment	Provide protective clothing and or equipment.

2. Accident/Incident reporting, investigation and recording

(a) Before commencement of the field activity, the staff member in charge must be familiar with the UBC policy on Accident/Incident Reporting, Investigation and Recording Procedures

(b) An Accident/Incident Report must be completed for all incidents, no matter how minor. *The supervisor of the group or the staff member in charge of the field activity should undertake an investigation of the incident on site and assist with the completion of the CAIRS incident report form. A thorough investigation of the immediate and underlying causes of an incident is essential to prevent a recurrence.* Refer to the UBC Incident Site Investigate Guide for details. The CAIRS report is on-line and should be completed as soon as on-line access is possible.

HAZARD CHECKLIST	<u>Possible source/agent</u>	<u>Initial risk level before control measures</u>	<u>RISK CONTROL measure</u>	<u>Final risk level</u>
		Low, Med, High or N/A	<u>MUST BE FILLED IN IF THERE IS ANY RISK</u>	
Temperature	<input type="checkbox"/> Fire <input type="checkbox"/> Hot environment <input type="checkbox"/> Cold environment <input type="checkbox"/> Other _____			
Water or Immersion in	<input type="checkbox"/> Boating <input type="checkbox"/> Swimming <input type="checkbox"/> Diving <input type="checkbox"/> Collecting or travelling near water bodies <input type="checkbox"/> Other _____			
Stress	<input type="checkbox"/> Thermal – heat <input type="checkbox"/> Thermal - cold <input type="checkbox"/> Repetitive activity/motion <input type="checkbox"/> Other _____			
Hygiene	<input type="checkbox"/> Food preparation <input type="checkbox"/> Food storage <input type="checkbox"/> Personal (eg , cleaning and toilet facilities) _____ <input type="checkbox"/> Other _____			
Allergies and allergic reactions (specify)	<input type="checkbox"/> Chemical _____ <input type="checkbox"/> Animal _____ <input type="checkbox"/> Food _____ <input type="checkbox"/> Other _____			

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Cutting, stabbing, puncturing	<input type="checkbox"/> Blades/knives <input type="checkbox"/> Sharpened tools <input type="checkbox"/> Equipment <input type="checkbox"/> Environment (eg. thorny bushes) _____ <input type="checkbox"/> Other (specify)			
Entanglement	<input type="checkbox"/> Rope/wires <input type="checkbox"/> Grass <input type="checkbox"/> Clothing <input type="checkbox"/> Other _____			
Slipping, tripping and falling	<input type="checkbox"/> Rope/wires <input type="checkbox"/> Uneven surface <input type="checkbox"/> Wet environment/surface <input type="checkbox"/> Muddy environment/surface <input type="checkbox"/> Working at heights/ladder use <input type="checkbox"/> Tree climbing <input type="checkbox"/> Other _____			
Site specific Animal hazards	<input type="checkbox"/> Bites <input type="checkbox"/> Stings <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Other (specify species if known and identified hazard)			
Electrical	<input type="checkbox"/> Power generation equipment <input type="checkbox"/> Plant and Equipment <input type="checkbox"/> High Voltage <input type="checkbox"/> Other _____			

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Chemicals (specify)	<input type="checkbox"/> Handling and use <input type="checkbox"/> Transport <input type="checkbox"/> Storage <input type="checkbox"/> Name of chemical(s) _____ _____ _____			
Radiation	<input type="checkbox"/> Ionising source <input type="checkbox"/> Non-ionising source <input type="checkbox"/> Plant and Equipment (laser) <input type="checkbox"/> Electromagnetic <input type="checkbox"/> Ultraviolet (lamps/solar) <input type="checkbox"/> Other _____			
Pressurised vessels or equipment (includes compressed air and gas bottles)	<input type="checkbox"/> Handling and use <input type="checkbox"/> Transport <input type="checkbox"/> Storage <input type="checkbox"/> Name of gas(es) _____ _____			
Vehicles, plant and machinery	<input type="checkbox"/> Four wheel drive <input type="checkbox"/> Quad bike <input type="checkbox"/> Boat <input type="checkbox"/> Trailer <input type="checkbox"/> Bus <input type="checkbox"/> Heavy vehicle _____ <input type="checkbox"/> Scientific equipment <input type="checkbox"/> Motorised equipment <input type="checkbox"/> Pressure equipment <input type="checkbox"/> Conveyors <input type="checkbox"/> Sampling equipment <input type="checkbox"/> Other _____			

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Vibration	<input type="checkbox"/> Plant and Equipment <input type="checkbox"/> Environment (eg earthquake) <input type="checkbox"/> Other_____			
Crushing	<input type="checkbox"/> Equipment <input type="checkbox"/> Plant <input type="checkbox"/> Environment (eg rock fall)_____ <input type="checkbox"/> Other_____			
Noise	<input type="checkbox"/> Plant and Equipment <input type="checkbox"/> Vehicle_____ <input type="checkbox"/> Environment_____ <input type="checkbox"/> Other_____			
Inhalation	<input type="checkbox"/> Fumes <input type="checkbox"/> Smoke <input type="checkbox"/> Dust <input type="checkbox"/> Welding vapours <input type="checkbox"/> Chemicals (specify)_____ _____			
Suffocation	<input type="checkbox"/> Tunnels <input type="checkbox"/> Avalanches <input type="checkbox"/> Land slippage <input type="checkbox"/> Confined space <input type="checkbox"/> Other_____			

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Struck by or striking against	<input type="checkbox"/> Plant and Equipment <input type="checkbox"/> Vehicle <input type="checkbox"/> Lightning <input type="checkbox"/> Environment (eg rock fall, tree branch) _____ <input type="checkbox"/> Other _____			
Other factors				

Completed by: (Name)	Date:
Completed by: (Signature)	Date:
Signed: (Supervisor)	Date:
Signed: (Dept Head or delegate)	Date:

NOTE: This form is approved only when all signatures have been obtained.