

Risks associated with working in remote areas

This table was prepared to help managers and individuals responsible for an activity in remote areas to identify the risks involved in their learning or research activities. In addition, this table identifies mandatory protective equipment and training required for the safe conduct of research activities.

In order to determine which protective equipment and training is required, the manager or person responsible for the activity must identify the potential risks. When a risk is identified, the manager or person in charge is responsible for taking the necessary measures to protect the health and safety of the members participating in his or her research activity.

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
Access by road	Driving on ice and/or gravel roads, vibrations			Adapt your driving, have the proper tires, make frequent stops to check anchorages for fiberglass boxes and trailers			
	Accident, breakdown			Have a means of communication (e. g. satellite phone, inReach®, cell)	N/A		
	Driving with a trailer			Have experience and knowledge of the various obligations of the Highway Safety Traffic Act, have a spare tire and the tools to replace it. Check from time to time the trailer hitch and straps for the equipment.	N/A	https://saaq.gouv.qc.ca/transport-biens/particulier/remorque/	
	Flat tire			Have a spare tire and know how to install it; see that the spare tire lowering mechanism is functional. Have a means of communication.	N/A	https://blog.belairdirect.com/flat-tire-install-spare-nine-steps/	
	Long hours, difficult road conditions and reduced visibility, presence of wildlife			Be at least two people; have solid driving experience; have a means of communication, do not hesitate to put on the hazard warning lights and park in the shoulder area, or even provide the vehicle with an emergency kit.	N/A	https://drivingschool.caaquebec.com/courses-for-individuals/winter-driving-course/ ; https://icarexperience.ca/experiences/autres/conduite-preventive/	

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
Infrastructure use	Falling down stairs			Hold ramp; notify when slippery, snow removal of driveways and de-icing.	N/A		
	Slippery walkways and slippery surfaces			Put sand/gravel on the slippery surfaces	N/A		
	Snowfall from roof and overhangs			Assess the amount of snow and ice on the roof. Whenever possible, keep a distance between you and the building if you have to pass near the building.	N/A		
	Fire			Know where the fire extinguishers are in each building and how to use them; identify emergency exits and study evacuation plans.	- Extinguisher	https://www.securitepublique.gouv.qc.ca/securite-incendie/prevenir-incendie/conseils-prevention/extincteur-portatif.html	
	Electricity			Avoid direct contact with exposed live conductors or live circuit parts.	N/A	https://www.cchst.ca/oshanswers/safety_haz/electrical.html	
	Water damage and/or backflow			Know the location of water valves, know the location of backflow equipment, inform officials and take pictures.			
	Vandalism			Call the local authorities (911), do not intervene, Notify the responsible persons and note the damage.			
Use of tools	Use of standard equipment/tools (e. g. drill, saw, sandblaster, etc.)			Have experience in handling these tools, or be assisted by someone experienced for a short training period.	- Protective glasses - Plugs or earmuffs - Gloves - Safety boots		
	Manual felling of trees			Have training in manual tree felling and use of safety equipment.	- Safety boots - Glasses - Plugs - Reinforced pants - Gloves - Helmet with visor		Abattage manuel sécuritaire en forêt SST-20

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
	Use of an ice auger or permafrost drill			Have experience, make sure your clothes are close to the body (nothing loose or hanging) and that long hair is tied.	- Safety boots - Glasses - Plugs - Safety leggings - Gloves - Helmet		
	Use of a drone			Drone under 25 kg: Have experience and respect the rules applicable to the use of drones Drone over 25 kg: Have the training and comply with the rules applicable to the use of drones	N/A	https://www.tc.gc.ca/fr/services/aviation/securete-drones.html	Special Flight Operations Certificate (UAV weighing more than 25 kg)
Lab work	Laboratory work (exposure to chemicals)			Use fumehood; SIMDUT training	- Protective glasses - Nitrile gloves - Lab coat		SIMDUT (SSP)
	Transport of hazardous chemicals by road or air			Transport of hazardous chemicals by road or air	N/A		SIMDUT (SSP)
Use of motorized vehicles	Snowmobile			Have theoretical and practical knowledge of snowmobiling; wear a helmet.	- Helmet - Security bib		Snowmobile training course
	Operating a watercraft less than 24 feet long			Possess the Canadian Pleasure Craft Operator Card; have experience; hold a Restricted Radiotelephone Operator Certificate (VHF-DSC) (only required in the marine environment).	Personal protective equipment: - Personal floatation device - Floating heaving line at least 15 metres long Boat safety equipment: - Scope or manual bilge pump - Manual propulsion device or anchor fixed to a cable, rope, chain or	https://cartebateau.com/fr/rappel-sur-cours-bateau-plaisance https://cartebateau.com/fr/equipement-securete-nautique-obligatoire	Radiotelephone Operator's Restricted Certificate (VHF-DSC) (only required in the marine environment)

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
					combination thereof, at least 15 metres long Navigation equipment: - Sound instrument (whistle without ball, gas or electric sound horn - Waterproof flashlight or pyrotechnic fires that comply with the Collision Regulations if the pleasure craft is operated between sunset and sunrise or in periods of reduced visibility - Maritime VHF radio (required in marine environments)		
	Helicopter			Ensure that the pilot summarizes safety rules annually and as soon as a new passenger board the aircraft; never operate behind the helicopter; hold clothing, hat, hat or equipment securely so that they do not fly away; wait for instructions before approaching or leaving the helicopter	N/A		
	Poor visibility (fog, whiteout)			Exit only on clear days; do not hesitate to get out of the vehicle and test the terrain on foot if visibility is too poor, do not hesitate to inform the person in charge on site if you are not comfortable.	N/A		
	Use of inflatable watercraft, canoe or kayak			Wear a personal floatation device; bring extra clothing in case of capsizing,	- Personal floatation device - Floating heaving line at	https://cartebateau.com/fr/rappel-sur-cours-bateau-plaisance	Nautical safety

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
					least 15 metres long - Bailer	https://cartebateau.com/fr/equipement-obligatoire-cano-kayak-aviron-canada	
	ATV / Side-by-side			Have theoretical and practical knowledge of ATV riding; wear a helmet.	- Hemet - Safety bib - Gloves, boots		ATV
Presence of wildlife	Foxes			Do not approach; do not feed; collect your equipment and monitor it.	Pepper spray		Canadian Firearms Safety Course (CFSC) Introduction to firearms
	Attack (polar or black bear, wolf)			Have completed the Firearms Safety Course (FSCC) and the Firearms Possession/Acquisition Licence (PAL).	- Pepper spray - Bear Banger - Shotgun (with ammunition)	http://www.rcmp-grc.gc.ca/cfp-pcaf/safe_sur/cour-fra.htm#a1 http://www.rcmp-grc.gc.ca/cfp-pcaf/formulaire/index-fra.htm#a921	
	Presence of black bears			Take refuge indoors; do not approach it; do not feed; make noise; be vigilant (scan the landscape regularly)	- Pepper spray - Bear Banger - Shotgun (with ammunition)	https://www.pc.gc.ca/fr/docs/v-g/oursnoir-blackbear	
	Presence of polar bears			Take refuge indoors; keep a safe distance away; be vigilant, keep food and garbage in a waterproof fly camp box; activate bear fences and electric fences before bedtime	- Pepper spray - Bear Banger - Shotgun (with ammunition)	http://www.nunavikparks.ca/fr/securite https://www.pc.gc.ca/fr/pn-np/nu/sirmilik/securite-safety/ours-bears	
	Presence of wolves			Take refuge inside; do not approach it; do not feed; do not run away.	- Shotgun (with ammunition)	https://www.pc.gc.ca/fr/pn-np/bc/pacificrim/securite-safety/faune-	

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
						wildlife/prudent-wary	
	Exposure to biological/animal liquids (e. g. bite)			Have the necessary vaccinations for handling required by the job (e.g. tetanus and rabies for foxes); wear nitrile gloves at all times when handling animals.	- Nitrile gloves		
Presence of insects	Presence of wasp nests			Inspect the underside of steps and buildings and use insecticides (available at the station)	N/A		
	Insect bites and reactions			Wear long clothing and a net; use insecticide	N/A		
	Allergies (pollen, etc.)			Take antihistamines	EpiPen®		
Physical constraints and injuries	Frostbite			Dress well; do not expose skin to extreme cold; supervise colleagues	- Warm hat - Gloves or mittens - Scarf - Hand warmers - Aluminium blanket - Warm socks - Boots adapted to cold conditions		
	Hypothermia			Know how to recognize symptoms to react rapidly when first signs appear; warm up; remove damp clothes; drink a sweet (non-alcoholic) warm drink	- Warm hat - Gloves or mittens - Scarf - Hand warmers - Aluminium blanket - Warm socks - Boots adapted to cold conditions	https://www.csst.gc.ca/prevention/the-me/travail_froid/Pages/prevenir_soigneur_hypothermie.aspx	

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
	Physical exhaustion			Lift equipment properly; eat well and drink well; rest	- Wear gloves		Load handling and lifting
	Dehydration			Always carry enough water; drink regularly, even if you are not thirsty	- N/A		
	Foot injuries (blisters, sprains, athlete's foot, etc.)			Analyze the surfaces to be walked on; wear appropriate shoes; change socks regularly; have second skin dressings	- N/A		
	Back injuries			Hold the load with a good grip, close to the body and do not overload; perform the movements with the strength of the thighs; move the heavy loads in pairs	-Wear gloves		Load handling and lifting
	Sun stroke, blindness and sunburn			Wear a hat; wear long clothes; drink lots of water; use sunscreen; wear polarized sunglasses	- Wear hat/cap - Use sunscreen - Wear sunglasses		
	Isolation, psychological unease, mental illness			Make sure you are prepared before leaving; do not hesitate to share your unease with a trusted person within the team	- N/A		
	Injuries (general)			Obtain CPR certification and/or wilderness & remote first aid training	First aid kit		Wilderness & Remote First Aid Course
	Falling in cold waters			Always check ice thickness before venturing onto frozen surfaces; react immediately to prevent hypothermia by removing wet clothing and warming up		http://societedesauvetage.org/puis-je-maventurer-sur-la-glace/	
	Fire/burns			Be sure that the waste has finished burning (e. g. toilet paper) before leaving a site; if necessary, extinguish the fire as soon as possible (water, dig a trench around the affected area)			
	Wind/flying debris & objects			Securely anchor your tent and install all the tension wires/ropes, put rocks to solidify the poles; keep the camp tidy (no cardboard or plastic bags lying around)			
	Storms/Lightning			Move away from water, electrically conductive objects and high places in open areas. On a body of water: Return to shore immediately. In a forest: Take refuge under a dense cover of small trees.		https://www.urgencequebec.gouv.qc.ca/fr/situation-urgence/Pages/Orange-violent.aspx	

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
	Landslides/Avalanches			Identify risk areas; practice appropriate travel techniques in avalanche terrain		https://www.avalanche.ca/planning/decision-making	Avalanche safety training
Travel in the field	Excessive noise			Wear safety equipment, stay away from noise if possible	- Plugs or earmuffs		Wilderness survival training
	Failure to return to your camp (rivers have risen, helicopter is blocked, etc.)			Always have enough warm clothing in your bag (down coat, raingear, hat); know the coordinates of the survival boxes if necessary and go there	- Emergency flares		Wilderness survival training
	Getting lost			Always carry a GPS/map and compass and know how to use them (practice before the field); always have a communication device (radio, satellite phone); plan a route, share it with colleagues and trust it; always carry extra clothing and food in your bag	- GPS - Map & compass		Wilderness survival training
	Battery failure (radio, GPS, etc.)			Always have spare batteries; if there is a risk of getting lost, do not move; make sure you always have landmarks to guide you through the landscape (mountains, ice floes, etc.); make sure to provide your itinerary to colleagues or officials before leaving for the field	N/A		Wilderness survival training
	River crossing			Do not cross when the current is too strong or the water is too high; detach your backpack and use your two walking sticks when crossing, ideally be at least two or make sure someone sees you in the distance	N/A		Wilderness survival training
Working at heights	Risk of falling from ladder			When the use of a ladder or stepladder is necessary, it is important to ensure that you have the right stepladder for the task (right height) and that it is in good condition.	N/A		Wilderness survival training / Working at heights safety training

Activity	Risk	Exposure		Preventive measure	Mandatory protective equipment	Information	ULaval Training Offered
		Yes	No				
	Risk of falling from more than 1.5 metres			When there is a risk of falling more than 1.5 metres into a liquid or a risk of falling more than 3 metres on land, the individual must protect his safety by attaching himself to an anchorage point	- Harness - Deceleration lanyard - Helmet		Travail en hauteur
	Rock wall descent / rock climbing			When there is a risk of falling more than 1.5 metres into water or a risk of falling more than 3 metres on solid ground, you must protect your safety by attaching yourself to an anchorage point	- Harness - Helmet - Rope - Carabiner - Belay device		Belay course Leading rope climber course
	Storms / lightning			Move away from water, electrically conductive objects and high places in open areas. On a body of water: Return to shore immediately. In a forest: Take refuge under a dense cover of small trees.		https://www.urgence.quebec.gouv.qc.ca/fr/situation-urgence/Pages/Orage-violent.aspx	
Campsite	Use of accelerant			Authorized persons only			SIMDUT (SSP)
	Use of propane			According to the manufacturer's instructions, SIMDUT			SIMDUT (SSP)
	Electrical shock			According to the manufacturer's instructions (generator, fence, PV system)			