

Hazard	Pre-mitigation risk level	Risk severity	Action to be taken to reduce risk	Mitigated risk level	Action to be taken in event of occurrence
<b>Hypothermia and cold injury, including frostbite</b>	<b>M</b>	<b>H</b>	Range of water clothing appropriate for all conditions from full emersion appropriate dry suit to fair weather paddling clothes and everything in-between.	<b>M</b>	Get to land, change clothing, layer up and get into sleeping bag and shelter (tent or emergency shelter), take on hot liquids and food, stay awake.
			Hot food/drink in thermos always available.		Light fire for warmth if needed.
			Expedition medical training day for all participants to train on risks and management of hypothermia and the recognition and early management of frostbite.		Application of reflective foil blanket.
			Full SAR and evacuation medical insurance for each participant.		Participants to follow laminated advice on diagnosis and management of hypothermia as part of medical kit in event of UK contact failure.
					Evacuation to be activated early in event of participant becoming unwell or suspected frostbite.
<b>Sunstroke and heat illness</b>	<b>M</b>	<b>H</b>	Sun hat.	<b>L</b>	Rehydrate and if necessary take a rest day.
			Waterproof sun cream and block.		Moisturise any burns.
			Sunglasses.		InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition).
			Tarp for extra shade off water.		Participants to follow laminated advice on diagnosis and management of severe heat illness as part of medical kit in event of UK contact failure.
			2L water bladder + 24L on boat water storage.		Evacuation to be activated early in event of participant becoming unwell.
			Medical kit with rehydration salts.		
			Expedition medical training day for all participants to train on risks and management of hypothermia. Full SAR and evacuation medical insurance for each participant.		
<b>Capsize and drowning</b>	<b>M</b>	<b>H</b>	Significant training in self rescue including reliable self-roll, cowboy rescue and paddle float outrigger rescue for each participant.	<b>M</b>	Attempt self-rescue.
			Personal flotation device always worn when on the water.		If self-rescue not possible - secondy kayaker to tow boat and participant to shore or safe area where rescue can be attempted.
			Inflatable emergency gear deck bag.		Head to nearest shore if conditions allow. Control boat entry using tow-lines.
			Carrying spare paddle, bilge pump.		Activate SAR system via InReach.
			Boat and paddle leashes.		Stay with boat and equipment and await rescue.
			Assessment in advance of likely conditions on each part of the route, with identification of higher risk segments.		Activation of personal locator beacon if separated.
			Daily risk assessment of likely conditions based on up to date forecasts.		Expedition leader trained in wilderness first aid including drowning.

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			Use of contingency days to avoid being on the water during severe weather conditions that increase risk of drowning. Each expedition member to carry personal locator beacon. Full SAR and evacuation medical insurance for each participant.		Head to nearest shore if conditions allow. Control boat entry using tow-lines.
Tidal currents	M	H	Careful tidal planning using local tidal charts and guidebooks. Use of contingency days to avoid difficult conditions. Each team member to carry personal locator beacons on their person at all times. Full SAR and evacuation medical insurance for each participant. Expedition training day for all participants to train on evacuation protocols.	L	Head to nearest shore if safe to do so. Activation of SAR system via InReach. Activation of personal locator beacons.
Navigation error	M	H	Detailed kayaking charts where they exist. Use of InReach GPS navigation to confirm position. Deck compass and coastal navigation as required. Pre-downloaded marine trails map for BC coast. Each expedition member to carry personal locator beacon on their person at all times. Expedition training day for all participants to train on evacuation protocols. Full SAR and evacuation medical insurance for each participant.	L	Use of InReach GPS to calculate position. VHF long wave radio to contact local coastguard station. Activation of personal locator beacons to enable search and rescue evacuation.
Damage to boat or equipment	L	M	Full repair kit and patches suitable for dealing with repairs. Inflatable drybags for added floatation in case of a tear on water. Use of contingency days in order to avoid paddling in severe weather conditions. Each team member to carry personal locator beacons on their person at all times. Expedition training day for all participants to train on evacuation protocols. Full insurance for equipment. Full SAR and evacuation medical insurance for each participant.	L	Make land and use repair kit to make repairs. If unresolved and serious head to closest port from which more serious or permanent repairs could be made. If self-recovery is impossible make contact with local marina / SAR/ activate personal locator beacon for non-urgent recovery.
			Check every potential campsite thoroughly for signs of predators.		Follow BC parks guidance on bear and animal encounters.

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<b>Wild animals: bear, wolf, cougar</b>	<b>L</b>	<b>H</b>	Avoid estuary mouths.	<b>L</b>	Bear spray as last resort.
			Follow British Columbia parks and local guidance on wild animal management.		
			Carry bear spray at all times.		
<b>Running out of water or food</b>	<b>L</b>	<b>H</b>	Water filtration device.	<b>L</b>	Carry on to next suitable point of resupply. If situation is urgent contact closest marina on non-emergency number / radio frequency.
			Desalination device.		
			Carry food supplies for 1.5x expected days to next resupply point.		
			Fishing line with appropriate group training on how to use and cook.		
<b>Forest fires</b>	<b>L</b>	<b>H</b>	Use of communication devices (Garmin 66L InReach, VHF-DSC radio, mobile phone in waterproof case) to keep in contact with local coastguard stations and check in where risk of forest fires.	<b>L</b>	Evacuation to be activated early if concerns of proximity to fire.  Use of kayak to escape to islands where fires cannot reach.
			Full SAR and evacuation medical insurance for each participant.		

### **Medical risk assessment**

<b>Any unforeseen illness not detailed below</b>	<b>L</b>	<b>H</b>	All participants to undergo medical risk assessment prior to departure on expedition.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Get oneself to a point where it is safe to recuperate for an extended period of time if necessary. Seek medical assistance and advice if available locally. Evacuation to be activated early in event of any ongoing concerns.
			All participants to ensure travel vaccines are up to date.		
			Contingency days to allow rest when needed		
			Contingency fund for recovery days in accommodation.		
			Full SAR and evacuation medical insurance for each participant.		
			Map noting closest medical centres / pharmacies at each location.		
<b>Gastroenteritis</b>	<b>L</b>	<b>H</b>	Carry tinned and packaged food.	<b>L</b>	Oral rehydration salts and antibiotics as part of medical kit. Contingency days to be taken in event of participant falling unwell to allow full recovery. InReach communication for UK based medical advice to the expedition medical planner (for section 1- medical advisor based on the expedition). Participants to follow laminated advice on diagnosis and management of gastroenteritis as part of medical kit in event of UK contact failure. Evacuation to be activated early in event of participant still feeling unwell.
			Water filter and desalination equipment.		
			Ensure food thoroughly cooked before consuming.		
			Ensure equipment thoroughly cleaned after previous use, before re-use.		
			All participants to be briefed pre-expedition on the safe way to collect and filter water.		

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			Full SAR and evacuation medical insurance for each participant.		
<b>Insect bites and related skin infection</b>	<b>M</b>	<b>H</b>	All participants to wear full length clothing when on shore, including face-net for insects.	<b>L</b>	Anti-septic, anti-histamines, anti-fungal and bite cream as part of medical kit.
			High DEET content insect repellent spray to be used.		InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition), using pre-prepped 'rash and skin almanac' to aid clinical decision making process.
			Participants to check each other daily for hidden tick bites.		Participants to follow laminated advice on diagnosis and management of skin infections as part of medical kit in event of UK contact failure.
			All participants to be briefed pre-admission about local insects and risk of tick bites.		Co-amoxiclav and doxycycline to cover common skin and tick-related infections included in medical kit to be used on advice of medical planner.
			All participants to be briefed on how to clean and remove ticks.		Evacuation to be activated early in event of participant becoming unwell.
Full SAR and evacuation medical insurance for each participant.					
<b>Lower respiratory tract infection</b>	<b>L</b>	<b>H</b>	All participants to undergo medical risk assessment prior to departure on expedition.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition).
			All participants advised to undertake pre-departure fitness programme.		Participants to follow laminated advice on diagnosis and management of chest infections as part of medical kit in event of UK contact failure.
			Full SAR and evacuation medical insurance for each participant.		Oral co-amoxiclav and doxycycline in medical kit to be used on advice of medical planner.
					Evacuation to be activated early in event of participant becoming unwell.
<b>Dental infection or abscess</b>	<b>L</b>	<b>H</b>	All participants to get UK dental check up at least 3 months prior to expedition departure.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition).
			Full SAR and evacuation medical insurance for each participant.		Oral co-amoxiclav in medical kit to be used on advice of medical planner.
					Evacuation to be activated early in event of participant becoming unwell.
<b>Conjunctivitis</b>	<b>L</b>	<b>M</b>	All participants to undergo medical risk assessment prior to departure on expedition.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition).
			All participants to be advised on methods to reduce risk of ear infections.		Participants to follow laminated advice on diagnosis and management of conjunctivitis as part of medical kit in event of UK contact failure.
			Advice on eye hygiene given to all contact lens wearers.		Topical antibiotics as part of medical kit under direction of UK based medical advisor.

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			Full SAR and evacuation medical insurance for each participant.		Contingency days to be used to aid recovery before returning to water. Evacuation to be activated early in event of participant becoming unwell.
<b>Inner ear infection (otitis media)</b>	<b>M</b>	<b>M</b>	All participants to undergo medical risk assessment prior to departure on expedition. All participants to be briefed on methods to reduce risk of ear infections. Full SAR and evacuation medical insurance for each participant.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Simple analgesia as part of medical kit. Contingency days to be used to aid recovery before returning to water. Evacuation to be activated early in event of participant becoming unwell.
<b>Outer ear infection (otitis externa)</b>	<b>M</b>	<b>M</b>	All participants to undergo medical risk assessment prior to departure on expedition. All participants to be briefed on methods to reduce risk of ear infections. Full SAR and evacuation medical insurance for each participant.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Participants to follow laminated advice on diagnosis and management of outer ear infections as part of medical kit in event of UK contact failure. Topical gentamicin and hydrocortisone drops as part of medical kit to be used at direction of UK based medical planner. Contingency days to be used to aid recovery before returning to water. Evacuation to be activated early in event of participant becoming unwell.
<b>Allergy</b>	<b>L</b>	<b>H</b>	All participants to undergo medical risk assessment prior to departure on expedition to identify common and likely allergens. Pre-diagnosed participants to ensure allergen avoidance and to carry prescribed adrenaline auto-injectors. Full SAR and evacuation medical insurance for each participant.	<b>L</b>	Antihistamines as part of medical kit. Participants with pre-diagnosed anaphylaxis to use self-administer adrenaline auto injector. Evacuation to be activated early in event of participant becoming unwell.
<b>Sea-sickness</b>	<b>H</b>	<b>L</b>	All participants will have significant sea-kayak training and experience, and will understand their specific risk of sea-sickness prior to expedition departure.	<b>M</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Cinnarazine tablets available as part of expedition medical kit. Hyoscine butyl bromide patches available as part of expedition medical kit. Contingency days to be used to aid recovery before returning to water.
<b>Injury</b>					
<b>Blisters</b>	<b>H</b>	<b>L</b>	All participants to be briefed on blister recognition and prevention, stressing that early prevention can prevent blisters becoming significant	<b>M</b>	Use of gloves and simple analgesia in order to allow the expedition to continue. Blister first aid.

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			problems.		Use of contingency days to allow time to heal. Activation of evacuation procedures if expedition not able to continue.
<b>Soft tissue lacerations</b>	<b>H</b>	<b>M</b>	All participants to be trained prior to expedition on prevention and management of soft tissue lacerations. Careful boat handling and use of contingency days to avoid rough conditions that pre-dispose to lacerations. Expedition leader (present throughout expedition) qualified in wilderness first aid. Full SAR and evacuation medical insurance for each participant.	<b>M</b>	Medical kit to include antiseptic, dressings, steri strips and wound stapler to facilitate management of soft tissue lacerations. Expedition leader qualified in wilderness first aid. Use of contingency days to allow wounds to heal. Activation of evacuation procedures if expedition not able to continue or if severe injury.
<b>Musculoskeletal injury and lower back pain</b>	<b>H</b>	<b>M</b>	All participants to be trained prior to expedition with advice on prevention of musculoskeletal injury, with safe lifting advice. All participants to be trained to recognise signs of neurological lower back pain. All participants advised to undertake pre-expedition conditioning regime to reduce risks of lower back pain and musculoskeletal injury. Full SAR and evacuation medical insurance for each participant.	<b>M</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Expedition leader qualified in wilderness first aid. Simple analgesia including paracetamol and ibuprofen available as part of medical kit. Activation of evacuation procedures if expedition not able to continue or if concerns over neurological lower back pain.
<b>Fractures</b>	<b>M</b>	<b>H</b>	Careful boat handling and use of contingency days to avoid rough conditions that pre-dispose to fractures. All participants to be trained prior to expedition on first aid management of fractures. Full SAR and evacuation medical insurance for each participant.	<b>M</b>	Expedition leader qualified in wilderness first aid. Expedition medical kit to contain anti-septic, dressings, strappings and equipment to enable splinting of fractures. Participants to follow laminated advice on diagnosis and management of fractures and directions on how to create a splint. Evacuation to be activated early in event of fracture.
<b>Joint dislocation</b>	<b>M</b>	<b>H</b>	Careful boat handling and use of contingency days to avoid rough conditions that pre-dispose to joint dislocation. All participants to be trained prior to expedition on first aid management of joint dislocation. All participants advised to undertake pre-expedition conditioning regime to reduce risks of joint dislocation. Full SAR and evacuation medical insurance for each participant.	<b>L</b>	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition). Expedition leader qualified in wilderness first aid. Participants to follow laminated advice on diagnosis and management of fractures and directions on how to create a splint. Evacuation to be activated early in event of fracture.

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Head and spinal injury	M	H	Careful boat handling and use of contingency days to avoid rough conditions that pre-dispose to head injury	L	InReach to be used to contact UK based medical advice from expedition medical planner (for section 1- medical advisor based on the expedition).
			Helmets to be worn in rough conditions and when coming in and out of shore by all participants.		Expedition leader qualified in wilderness first aid.
			Full SAR and evacuation medical insurance for each participant.		Evacuation to be activated early in event of head or spinal injury.
Major blunt or penetrating trauma	L	H	Careful boat handling and use of contingency days to avoid rough conditions that pre-dispose to trauma.	L	Expedition leader qualified in wilderness first aid.
			Full SAR and evacuation medical insurance for each participant.		Evacuation to be activated early in event of major injury.
Burns	M	H	All participants to be familiar with cooking equipment and fire safety.	L	Expedition leader qualified in wilderness first aid - to apply simple burns first aid.
			All participants to be briefed on the first aid management of burns.		Participants to follow laminated advice card on first aid management of burns.
			Full SAR and evacuation medical insurance for each participant.		Contingency days used to allow recovery in case of minor burn.
					Evacuation to be activated early in event of significant burn. Cling film applied to burn.