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Many Traditions One Alaska

University of Alaska
REMOTE TRAVEL SAFETY
GUIDE

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UNIVERSITY OF ALASKA REMOTE TRAVEL SAFETY GUIDE

I. INTRODUCTION AND PURPOSE

Travel in remote areas of Alaska presents many challenges. This Guide was written to increase awareness and assist University of Alaska wilderness travelers by outlining some common safety issues and providing recommended actions or behaviors. If you haven't already done so, please be sure to consult the Remote Travel Pre-Trip Planning Guide before your trip and complete and file your Remote Travel Emergency Plan. This Remote Travel Safety Guide should be accompanied by an Emergency Survival Guide for your reference for other common safety issues that can occur in the wilderness.

This Guide is designed to be used by University of Alaska students, faculty, and staff who travel to remote areas for business, research, or recreation. Information is included on travel, clothing, food and water, health, safety, subsistence, and survival techniques. It is recommended that all supervisors, graduate student major advisors, research principal investigators, student affairs personnel, student organizations, rural faculty, and any other University of Alaska affiliated individuals traveling in remote areas be familiar with the contents of this Guide, carry it with them on remote travel, and use it for training on how to work and recreate safely in the wilderness. University department heads and supervisors are responsible and accountable for safety performance in their respective areas of responsibility.

II. SAFETY AND SURVIVAL TIPS

Success and survival depend on planning, timing, common sense, and the intelligent use of supplies and equipment. Following are some wilderness survival tips.

1. You must help yourself, don't depend on someone else to think and plan for you. Confidence in your own abilities and your will to live can make the difference between life and death.
2. Whether in camp, in a vehicle, on foot, or in the water or air, always have a plan in case of an accident. Carry your survival kit with you whenever you leave camp.
3. Never leave camp alone. There should be at least two people per party when traveling in remote areas.
4. Tell someone where and when you are going and when you expect to return. Check in when you return. The same holds true if you must travel away from a downed plane or other vehicle; leave a message saying when you left and the direction you were headed.
5. Don't fight the environment. Conserve your energy - go around obstacles, not over or through them. Wait out high winds and other adverse weather.
6. Fuel stoves outside tents or shelters; fumes could be toxic, cause carbon monoxide poisoning, or could cause an explosion.
7. Don't light or use cooking stoves inside unventilated tents.
8. Make sure your tent is fire-resistant if you are going to have any open flames in it.
9. Do not pack liquid fuel for stoves with food; a spill could contaminate and ruin your food.
10. Store emergency food, gear, shelter, and sleeping protection away from main camp area; "do not put all your eggs in one basket."
11. In an emergency situation, do not overeat, but be sure to drink plenty of water. You can probably survive without food for a week or more, but you cannot survive without water.

III. TRAVEL SAFETY

A. Motor Vehicle Travel

A vehicle will provide shelter if you are stranded. Do not leave the vehicle unless absolutely necessary. The headlights from your vehicle can be used to signal potential rescuers. However, do not continue to use them for extended periods of time, as the battery will become quickly depleted, particularly in colder temperatures. Do not run the vehicle continuously. Make sure the tail pipe is clear of snow and mud. NEVER GO TO SLEEP IN A RUNNING VEHICLE. Make sure you have adequate ventilation, with a window slightly open. If possible, face the vehicle into the wind so that vehicle exhaust won't be drawn inside. See section on Carbon Monoxide Poisoning, Section V.C., for further information if you are stranded with a vehicle.

B. Boat Travel

Loading a boat safely is important. Keep the center of gravity low (don't stack gear too high). Distribute the weight of your gear evenly along the length of the boat. Do not depart if water conditions are not conducive for safe travel. Be aware of high water from rain, snow melt, or glacier melt, fast and unpredictable currents or tides, turbid water, floating debris, high winds and geographical features as these conditions may cause hazards. All participants must wear a Coast Guard rated and approved life vests whenever they are on a watercraft.

C. Air travel

Alaska Statutes, Section 02.35.110. Emergency rations and equipment, requires aircraft pilots to provide emergency equipment and rations for each and every flight within the state. Be sure that the owner and/or pilot confirms that the required survival gear is on board. Weight distribution is extremely important; let the pilot load the plane. Dress to survive the worst terrain and climate over which your air route will take you. Wear leather gloves. Carry extra clothes and your emergency survival gear. Do not smoke around fueling operations.

Helicopter Safety and Etiquette:

- If possible, deploy some light weight material as a wind sock to indicate wind direction to the pilot.
- Wait for directions from the pilot before approaching the aircraft.
- AFTER the pilot has acknowledged your presence and you are cleared to approach the aircraft:
 - o Approach or leave in pilot's field of vision, usually from the front of the aircraft.
 - o Approach or leave machine in a crouching manner (to stay below the main rotor).
 - o Stay away from the tail rotor.
 - o Approach or leave on the down slope side.
 - o Carry tools horizontally and below waist level, never upright or over the shoulder.
- Fasten seat belt after entering helicopter and leave it buckled until pilot signals you to get out.
- Never leave the helicopter while it is at a hover.
- Do not touch bubble or any moving parts (tail rotor, exposed linkage, etc.).
- Do not slam the helicopter doors.
- Wear survival clothing in flight, up to the waist, in case of an emergency.
- Keep heliport clear of loose articles (water bags, empty cans, etc.).
- Keep people away from helicopter during takeoffs and landings.
- Keep cooking and heating fires well clear of helicopter.

D. Snowmachines, ATVs, Four Wheelers

When traveling by snowmachine, all terrain vehicle (ATV), or four-wheeler, carry with you extra gasoline and whatever gear you will need to survive. Carry tools specific for each vehicle, in addition to your own basic survival kit. Do not travel alone. Never go further than you can walk back. Always carry snowshoes with you when traveling on a snowmachine.

E. Travel on foot

Carry your emergency survival kit, high energy food, and adequate water in all seasons.

1. Summer

- Travel in pairs.
- Be in shape and be prepared for difficult terrain.
- Treat foot blisters early. Stop to put tape or moleskin over tender spots as soon as they develop.
- Dress in layers, and stop to adjust the amount of clothing you are wearing if you start to become overheated when hiking.

2. Winter

In addition to the above precautions for summer, which remain applicable for winter travel, the following should be noted:

- Keep water bottles from freezing by carrying them close to your body.
- Never venture onto ice without checking your path with an ice chisel, pole, or other tool you can use to tap the ice. Snow cover can camouflage the real condition of the ice and what appears to be solid ice cover may not be. The best way to travel on ice is to check the path ahead with an ice chisel or other tool. If the ice sounds hollow when tapped or breaks through when jabbed, find another route. Be especially careful around the vicinity of lake inlets and outlets, feeder streams, down river from towns, where the lake is shallow, and near warm underground springs. Observation of the color and texture of the ice cover can help you determine whether or not to trust that the area is strong enough to hold your weight or that of your vehicle. Be aware of overflow conditions where several inches of water and a thin layer of ice may lie on top of a good bed of thick ice. When in doubt, do not attempt a crossing!

Note that river ice is 15 percent and sea ice is 50 percent weaker than lake ice. Air temperature should be no higher than 20F (-6C) for traveling on ice. Repeated use weakens ice so always watch for cracks.

F. If Lost

If you are lost, have been in a plane crash, or are for any other reason disoriented and unable to find your way, it is generally best to stay put unless to do so would further endanger your situation. Carefully consider your decision to leave; decision making in an emergency situation is sometimes difficult and always critical. Don't travel if you don't have a compass or can't determine direction in some other way.

If you do travel:

- 1) know your physical capabilities;
- 2) do not travel without proper clothing (including footwear);
- 3) have adequate food, shelter, and signals for the weather conditions and country;
- 4) make careful plans;
- 5) leave information about your plans on the vehicle or in the area you're leaving telling rescuers:

- when you left;
- where you are headed;
- your route of travel;
- your condition;
- what supplies you have.

Keep a sketch map of your travels, showing landmarks, distances covered, time passed, and direction. It will help you keep to a direct course, show progress, and enable you to retrace your trail, if necessary. Check your back trail continuously as you travel so you can retrace your path, if you need to. Terrain looks a lot different coming than it does going. Travel slowly, conserving energy, and taking regular breaks of sufficient duration to recover your strength and energy. Stay near open areas. Camp early in the afternoon, near water and timber, if possible.

IV. SURVIVAL BASICS

No matter how much advance planning you do, there is always a chance that something will go wrong and you will need to use your wits as well as your experience to solve the problem. Nothing can substitute for a positive mental attitude in those situations. If you have done your planning well, including advance thought about the emergencies which you might encounter, you will know that you have the capability to survive and to help your companions to survive whatever the situation may be. Keep your wits about you, and remember that your best resource is yourself.

The definition of an emergency is varied, and only you can know if you are in a survival situation, but do not underestimate the importance of considering the possibility. Do not assume that everything will turn out all right without working at it, and do not count on others to get you out of a tight situation.

A. Clothing

There are five ways that you will lose body heat:

Radiation	Up to 50 percent of body heat loss radiates from the head and neck areas. Keep these areas covered for maximum warmth.
Conduction	Cold is transmitted through contact with cold surfaces and will occur with lengthy periods of sitting or standing or otherwise having body contact with cold surfaces. Make sure there is enough insulation between your body and the cold surface, especially between your feet and the ground.
Convection	Protect your body from the effects of wind by wearing windproof garments and by tightening your collar around your neck and using your jacket waist line drawstring, if it has one.
Evaporation	You will lose heat through perspiration. Wear layers and remove them as necessary to prevent overheating.
Respiration	If you can see your breath, you are losing heat. Maintain an airspace or layer of insulation in front of your nose and mouth in very cold weather.

Dressing in layers and dressing loose, to avoid cutting off blood circulation, are the primary concepts for comfort and safety. There are three important layers to consider:

Inner (wicking)	This primary layer should be next to your skin and consist of fabrics that will wick the moisture away from your skin. Good fabrics include polypropylene,
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	thermax, and silk. Do not wear cotton. Wet fabrics next to your skin will make you feel cold and conduct more heat from your body.
Middle (insulating)	You need to create a dead air space to insulate your body. Good fabrics for this purpose include polarfleece, down, and wool. Wool and polypropylene are especially good as they retain most of their insulating value even when wet. Down will not provide effective insulation when wet and should always be avoided in wet or moist environments.
Outer (protection)	This final layer should protect your body from wind and moisture yet be breathable and allow for the evaporation of moisture. Gore-Tex is a Teflon-like substance that is both breathable and waterproof. Its pores are small and do not allow water to penetrate the material from the outside, but water vapor can escape from inside.

Don't forget to use layers on your hands and feet. Wear mittens with a thin glove liner for maximum protection and warmth. Do not wear gloves that restrict circulation to the hands. Wear a thin sock liner and sufficient outer sock to provide good insulation between your feet and the ground. Do not wear cotton socks.

B. Water

In winter, it is more energy and yield efficient to melt ice (or-hard-packed snow) for water rather than loose or fluffy snow.

In summer there is an abundance of water in rivers, lakes, streams, ponds, and other outdoor sources. Surface water on the tundra may have a brownish color (usually caused by iron contamination) but it is drinkable. You can sometimes get to water by digging down into moist soil. Most muddy water will clear if allowed to stand for a long enough period of time (usually a minimum of 15-20 minutes if undisturbed); muddy water can also be filtered through cotton cloth material to remove particulates. However, if at all possible, do not drink or cook with water without treating it. To prevent sickness or disease, water must be disinfected in one of the following ways:

1. Boiling is the only technique for treatment that is 100% effective against *Giardia*. Boil for one minute to kill *Giardia*; boil water for 20 minutes to kill other disease-causing bacteria or viruses.
2. Disinfection with chlorine or iodine is generally effective against *Giardia* and will destroy most other contamination as well. Note, however, that very cold or turbid water will require long treatment times, often up to several hours or overnight. Mix any of the following treatment additives with the measured amount of water in a container and make sure the screw cap threads of your water container are also disinfected for the appropriate contact time. If using tablets, the time should be measured after the tablets have dissolved.
 - a. Chlorine tablets (Halazone - 5 tablets per quart), or household chlorine bleach (Clorox, Purex, etc. - 4 drops per quart) for a contact time of 30 minutes.
 - b. Iodine (2% tincture of iodine - 10 drops per quart) or tablets (Globaline, Potable aqua, Coughlans, etc.) for a contact time of 30 minutes.
3. Water filters with pore size less than five micrometers and an appropriate water pressure will also be effective against *Giardia*. Plain resin or activated carbon water filters will probably not filter out *Giardia* cysts.

C. Shelter

Always store emergency food, gear, shelter, and sleeping protection away from main camp area.

1. Winter:

If you need a winter emergency shelter, find an area protected from wind and drifting snow. Beware of avalanche areas and avoid the bases of slopes or cliffs. Emergency shelters can be constructed in the snow. If possible, scrape the snow down to ground level to capture the radiant heat from the ground. Create an enclosure of snow that is about 8" thick. You will be able to bring up the ambient air temperature several degrees. You may find convenient shelters under the boughs of pine trees laden with insulating snow and clean pine needle insulated ground. However, avoid the use of open flames in this type of shelter as the wood and sap are very combustible.

2. Summer:

In summer you will need to find or make a shelter against rain and insects. Choose a campsite near water, but on high, dry ground. Mosquitoes and flies are thickest near woods. A ridge top or a river sandbar are good spots, especially if there's a breeze to keep the area insect-free. Be aware that a change in the weather resulting in rain may result in a rise in river levels and flooding of sandbars.

3. Unoccupied Cabins/Shelters:

Alaska law (Sec. 11.46.340. Criminal trespass) provides for emergency use of others' premises or property in the case of emergency if:

“(1) the entry, use, or occupancy of premises or use of personal property on the premises is for an emergency in the case of immediate and dire need; and

(2) as soon as reasonably practical after the entry, use, or occupancy, the person contacts the owner of the premises, the owner's agent or, if the owner is unknown, the nearest state or local police agency, and makes a report of the time of the entry, use, or occupancy and any damage to the premises or personal property, unless notice waiving necessity of the report is posted on the premises by the owner or the owner's agent.”

D. Fire

Carry matches in a waterproof container on your person at all times. Build fires in wind protected spots, in a pit area cleared of vegetation and lined with rocks, or gravel, if available. Beware of melting snow in the fire pit or from overhanging branches. If camping under snow laden trees, clear away snow before attempting to start the fire. In the snow, build a platform (of thick logs, rocks, or whatever is available) for your fire so that the coals do not sink into the snow and burn out. Do not build a fire on the tundra or forest floor without clearing and protecting the area from escaping fire. If possible, keep a water bucket at hand near the fire. Completely extinguish all fires before leaving the site as fires can smolder for days or weeks before breaking out into wildfires.

E. Food

Keep food out of your shelter. If trees are available and tall enough, try hanging your food supply about 30 feet up to keep bears (who can launch themselves vertically a significant distance), squirrels, and other wild creatures away.

V. HEALTH CONCERNS

Following are some health and safety conditions common to travel in Alaska. This Remote Travel Safety Guide should also be accompanied by an Emergency Survival Guide for reference to other common health and safety issues that can occur in the wilderness.

A. Frostbite

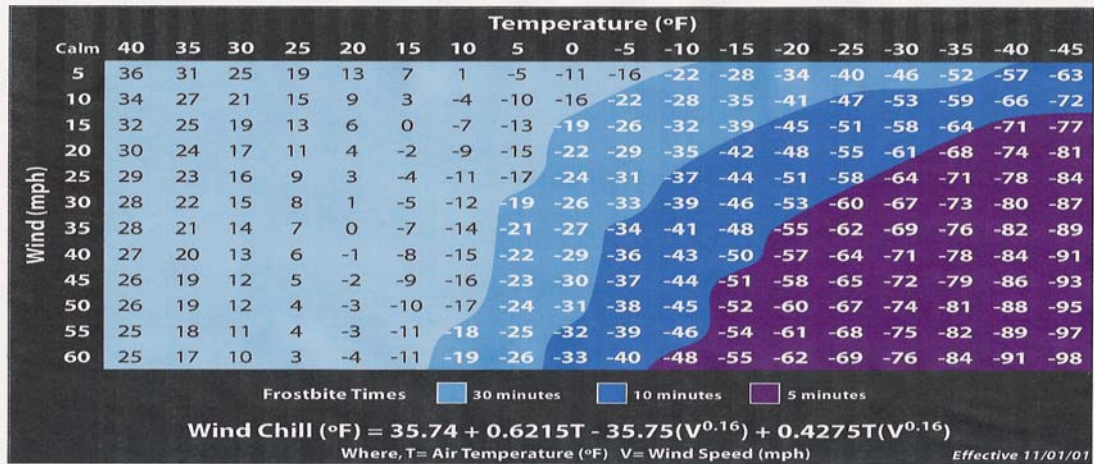
Frostnip is the first stage of frostbite and typically affects the tips of the cheeks, ears, nose, fingers, and toes. The skin may be reddened and feel numb or tingly. If this occurs, warm the skin by using warm compresses or immersing the area in warm water (100 to 105° F) until sensation returns. Body warmth of a companion can be utilized if it can be done without excessively cooling the other person. Do not rub or massage the skin as this will damage skin tissue. If symptoms of frostbite occur, seek medical attention.

Frostbite is damage to the skin from freezing and is due to prolonged exposure to cold temperatures. It occurs when ice crystals form in the skin or deeper tissue. The most common sites for frostbite are the fingers, hands, toes, feet, ears, nose, and cheeks. Severity depends on several factors including temperature, length of exposure, wind-chill factor, dampness, and type of clothing worn.

Be aware that wind chill factor can create an effective temperature much colder than the actual measured temperature. Wind Chill is the term used to describe the rate of heat loss on the human body resulting from the combined effect of low temperature and wind. When wind blows across the skin, it removes the insulating layer of warm air adjacent to the skin. When all factors are the same, the faster the wind blows, the greater the heat loss, which results in a colder feeling. As winds increase, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature. While exposure to low wind chills can be life threatening to both humans and animals alike, the only effect that wind chill has on inanimate objects, such as vehicles, is that it shortens the time that it takes the object to cool to the actual air temperature (it cannot cool the object down below that temperature). Wind chill was formulated to determine risk factors when operating outdoors under various conditions, and gives a very rough idea (in easily assimilated terms) of potential problems caused by the combination of wind with cold. See chart below:



Wind Chill Chart



Frostbite Symptoms: Patches of reddened skin that become white, hard, and swollen (or blackened, in severe cases); or skin that burns, tingles, or is numb or painful. Severe frostbite can result in blisters or ulcers forming and may involve deeper tissues. As frostbite progresses, tissue death and gangrene may occur.

Prevention: Avoid tight clothing that reduces circulation. (See Section IV A. Clothing.) Dress warmly and in layers. Keep the face and extremities covered. Avoid overheating and excessive perspiration. Change out wet clothing, especially socks and gloves. Handle liquid fuels extremely carefully so that these do not come into contact with your skin.

Treatment: Frostbite needs immediate professional medical attention. If you cannot get immediate medical help do not attempt to thaw the frozen tissue. This will be extremely painful. Keep body parts and muscles moving. Immobility can lead to lowering of circulation in the body and decrease body warmth. Swing and flex feet and hands, if not severely affected, to get blood flowing. Move inside to a warm area, if possible, and change any wet clothes. If you have the capability and you can get the patient to help immediately, warm the frozen part by using warm compresses or immersing the affected area in warm water (100 to 105° F) until sensation returns. Wrap re-warmed area in dry, sterile dressing. Give something warm to drink. Do not allow refreezing. If you cannot guarantee that the injured portion will not be refrozen, do not attempt to thaw the frozen area as refreezing will almost certainly result in the death of tissue. Do not rub or massage the skin as this will further damage skin tissue. Do not use direct heat such as heating pads or fires. Do not place the frostbitten skin in snow to “warm” it. Apply clean cotton or gauze between fingers and toes if they are affected. Do not disturb any blisters. Wrap warmed areas of the skin to prevent further damage. Further treatment will depend on the extent and severity of injury and may include treatment of skin damage with debridement or surgery.

B. Hypothermia

Hypothermia is life threatening. It is caused by cold, wet, or windy weather that causes the body to lose heat faster than it can produce heat. It most typically occurs at temperatures between 30F and 50F. The greatest factor causing hypothermia is inadequate clothing and exposure during

times following exertion. Hypothermia can occur in rugged mountain terrain where the weather can change extremely fast, or after being soaked in a stream crossing or a boating accident since most Alaskan waters are very cold all year long. The onset of hypothermia is insidious. Prevention must be practiced as an individual's ability to recognize and react to hypothermia dramatically declines as the condition develops. Hypothermia adversely affects an individual's decision making process.

Symptoms: Feeling cold, uncontrollable shivering, clumsiness due to loss of muscle coordination, slurred speech, inability to think clearly, and eventual unconsciousness and cessation of reflexes including heart and lung functions. Many victims in the later stages of hypothermia feel warm and try to shed clothing. Watch each other!

Treatment: Allow core area to warm up before warming the extremities. You want to keep blood circulating in the core area until it is warm enough to circulate to the extremities and to prevent cold blood from being circulated back to the core.

Strip and dry the victim; dress in dry clothing. Re-warm the victim SLOWLY; do not warm fast by immersing in warm/hot water. Cover the head and neck with warm clothing or blankets. Provide shelter out of the weather; get victim into a pre-warmed sleeping bag, into blankets, or into whatever is available to provide shelter and warmth. Chest to chest skin contact with another person in a sleeping bag works well. Warm rocks wrapped in clothing or hot water bottles are helpful. Warm drinks are not necessary, but may help in the psychological recovery. Breathing steam vapor may help. Do NOT give alcohol. Try to keep victim awake; this helps keep the body temperature up. Handle victim gently; don't let victim move or exercise.

Prevention: Dress appropriately and in layers so you can remove extra clothing before becoming overheated and wet with perspiration. Always carry rain gear and/or dry clothing. Keep your head and neck covered as up to 50% of body heat can be lost from these areas. Snack when necessary to keep up your energy; drink enough fluids, especially while active. Watch for symptoms in yourself and others in your party; don't hesitate to say something if others in your group are not dressed appropriately or if they show signs of fatigue or discomfort.

C. Carbon monoxide poisoning

Carbon monoxide (CO) poisoning is a real danger in cold weather if an external heat or light source is brought into a shelter or a running vehicle is used for warmth. CO poisoning is also a problem in boats. CO is emitted from portable heating devices, lanterns and candles. CO from vehicle exhaust can cause death when inhaled. It combines with hemoglobin in the blood and prevents the attachment of oxygen, depriving the tissues of oxygen. CO is slow to leave the blood and is cumulative in the body.

CO poisoning symptoms: You cannot see, smell, or taste carbon monoxide. Symptoms can feel like flu symptoms. Be aware and watch for the following:

- Body as a whole: headache, irritability, confusion, fainting, impaired judgment, unconsciousness, bizarre behavior;
- Respiratory: shortness of breath, increased rate of breathing, chest pain, stop breathing;
- Eyes, ears, nose, and throat: bright cherry red color to lips and face;
- Skin: bright red color to fingernails, pale skin;
- Gastrointestinal: nausea and vomiting;
- Heart and blood vessels: abnormal heart beat, rapid heart beat, low blood pressure;

- Nervous system: hyperactivity, convulsions, coma, and shock.

Treatment: Get victim to open air quickly. Check respiration and pulse; if both are absent, begin CPR, and continue until breathing begins or help arrives. Transport victim to a hospital as soon as possible. It takes about 24 hours for CO to get out of the bloodstream. Continue observation during this time frame. Administer medical O₂ if available.

Prevention: **DO NOT GO TO SLEEP IN A SHELTER WHEN ANY SOURCES OF CO (heating devices, lanterns, candles) ARE BEING OPERATED. YOU MAY NOT WAKE UP!** Run vehicles and heaters periodically, not continuously. Make sure the tail pipe is clear of snow and mud. **NEVER GO TO SLEEP IN A RUNNING VEHICLE.** Make sure you have adequate ventilation, with a window slightly open. Be sure you are upwind of vehicle exhaust so that it is not drawn into the vehicle. Carbon monoxide is also a hazard in boats. Make sure you have adequate ventilation.

D. Giardia

Giardiasis is caused by the parasite *Giardia lamblia*. The parasite is in the form of a cyst during part of its life cycle and the cysts are often found in untreated surface water in Alaska. Feces of beavers, hares, and other carrier animals contain the cysts, which can then be transmitted to humans who drink contaminated water.

Giardiasis Symptoms: Abdominal bloating, cramps, excessive gas, and diarrhea. Incubation time after ingesting the cysts averages 10 to 14 days, any symptoms lasting longer than seven days should be suspect, and you should see your physician. Diagnosis is confirmed by stool examination.

Treatment: Drugs should be prescribed by a doctor.

Prevention: Water from streams, lakes, ponds, and other outdoor sources must be disinfected before drinking. See Section IV. B. Water, for disinfecting methods.

E. Snow Blindness

Snow blindness is caused by the effects of excessive direct sunlight or reflected sunlight off of snow, ice, or water on unprotected eyes.

Symptoms: Gritty or burning eyes, double or blurred vision, red haze, halos, headache, loss of vision.

Treatment: Eliminate exposure to light for 18 to 24 hours. Use pain relievers.

Prevention: If you are without eye protection, devise some method of shielding your eyes from the direct and reflected (off of snow and water) sunlight using materials at hand to make slit goggles.

F. Immersion Foot (trench foot)

Feet that endure prolonged exposure to wet and cold can become saturated.

Symptoms: swelling, reddening, itching, burning, wrinkled, pale, cold, difficulty walking. If left untreated, tissue death can result in the necessity of medical amputation of the foot.

Treatment: remove wet gear from feet; pat dry (do not rub when feet are wet as this can cause tissue damage), re-warm, and elevate.

Prevention: Change socks whenever they become wet.

VI. WILD ANIMALS AND OTHER HAZARDS

A. Bear safety

To avoid dangerous situations in bear country:

- Make your presence known while you are traveling by creating noise and traveling in groups.
- Avoid traveling through thick brush with restricted visibility. If you have to hike through brush, keep the wind at your back so your scent will carry ahead of you.
- Avoid, and never get between, a bear and her cubs.
- Don't camp near a salmon stream or near a trail that might be used by bears.
- Avoid a bear's food cache. Take a detour if you see or smell carcasses or see scavengers.
- Don't leave food or dirty dishes lie around your campsite.
- Cook and store all food at least 100 feet away and downwind from camp.
- Avoid bringing along smelly foods.
- If you don't have a bear-resistant food container, hang food out of reach of bears, if possible. Try to get food up 30 feet as bears can launch themselves vertically a significant distance.
- Your campsite should be in an open area visible to wildlife.
- Don't sleep in clothes with food or food smells on them.
- Keep food, cooking equipment, lotions, cosmetics, and garbage out of your tent.
- Burn garbage completely and pack out the remains.

When you find yourself too close to a bear, do the following.

- Make noise and wave your arms to let it know you are a human. If the bear stands on hind legs and swings its head back and forth, that's to find out what you are. Bears may make a "whoosh" or "woof" sound as they turn to run - that's okay.
- Face the bear with your body. You want to look as large as possible as this may persuade the bear to run away. If you have a jacket on, keep your arms in the sleeves but bring the jacket (unzipped) up around behind your body with your hands raised above your head (like a kid flying) to create an even larger appearance.
- Bears may make a series of woofs, pop their teeth together, or both. That's not okay and is an indication of aggressiveness.
- Don't imitate the bear's sounds or positions.
- Don't turn and run from a bear; that may invite pursuit.
- If a bear actually gets very close or gets hold of you, lie still in the fetal position. Protect your head as much as possible, and don't move; play dead. This technique has been reported to be somewhat successful for brown bear encounters. However, it has not been reported as being very effective for aggressive black bears.
- If a bear is stalking you, is approaching your campsite, or an attack is continuing long after you have ceased struggling, fight back! Predatory bears are often young bears that can be successfully intimidated or chased away. Use a stick, rocks, your hands, teeth and feet to fight back.
- Attacks at night are a hunting behavior, fight for your life immediately if attacked at night.

B. Moose and Other Large Animal Safety

Although moose appear slow and passive, they are capable of stomping a person to death in a matter of minutes. Never approach a moose and never go anywhere near, or come between, a moose and her calf. Moose and other large animals will attack to protect themselves or their young, to defend their mates, or even to guard a food supply. Stay away from large animals and do not give them a reason to attack you. Do not make sudden moves either toward or away from them, as this may be interpreted as aggressive or territorial.

C. Animal Bites and Rabies

Avoid wild animals that seem curious or don't run away from humans. Arctic fox, red fox, wolves, caribou, dogs, and possibly river otters are known to carry rabies in Alaska. If bitten, clean the wound and control bleeding. If possible, and without endangering yourself or others, capture or kill the animal. Keep the animal's head as this part is needed for rabies determination. Do not touch the carcass with your bare hands. Get medical attention immediately.

D. Insect bites

A smoky fire helps keep insects away. Some individuals may experience minor skin irritations with commercial mosquito repellants. If repellant is not available, cover hands and face with oil, fat, or mud. However, do not use the oils and fats in bear territory as the aroma can attract the bears to you. Some insects can carry disease. Avoid being bitten by wearing protective clothing and/or using repellants and nets if possible. Cold packs may reduce the itching and swelling of insect bites. Solutions of household ammonia (without detergent) applied directly to the affected areas (not eyes and mucous membranes) are also very effective in reducing itching and irritation caused by most insect bites. Wash the skin with soap and water and minimize scratching to prevent infection.

E. Giardia

Giardiasis is an intestinal infection caused by the parasite *Giardia laniblia* found in northern rivers and streams. See Section IV. B. for ways of disinfecting all drinking water.

F. Fish poisoning

The sharp dorsal spines of some saltwater fish can cause wounds that become easily infected from water-borne bacteria or from neurotoxins in the spines themselves. Rockfish or other sculpins are especially toxic. Remove the spines from the skin, wash the area well, and apply an antiseptic.

G. Jellyfish stings

Jellyfish in Alaska are more a nuisance than a real danger. Wash tentacles away from the skin with saltwater (not freshwater, as this may trigger more stings). To deactivate the toxins, wash the affected area with any alcohol or vinegar for 30 minutes. Aldof's meat tenderizer is a field expedient anti-toxin.

H. Paralytic shellfish poisoning

Paralytic shellfish poisoning (PSP) is caused by a toxin and can cause death if consumed. One of the highest concentrations of PSP in the world are reported to be in the shellfish in southeast Alaska. However, PSP can be found along any Alaskan coastline. Clams, mussels, oysters, snails, scallops, and barnacles can all store the poison in their bodies. The toxin has been found in these shellfish every month of the year. Some clams have been known to store the toxin for up to

two years. If you are not sure that the shellfish you plan to eat are free of PSP, do not eat them.

Symptoms: Within 10 minutes to two hours after eating affected shellfish, a tingling sensation or burning of the lips, gums, or tongue will begin. Symptoms can progress to the neck, fingers, and toes, with loss of control to arms and legs. Nausea, vomiting, diarrhea, abdominal pain, respiratory difficulty, dry mouth, choking feeling, confused or slurred speech, and loss of muscle coordination can occur. Death can result from respiratory paralysis, usually within 12 hours.

Treatment: Get professional medical attention immediately. PSP can be fatal! If conscious, induce vomiting with syrup of ipecac and induce bowel movement with Epsom salts. Mouth to mouth resuscitation and/or CPR may be necessary. Monitor breathing and pulse.

Alternatively, if the person is conscious and alert, and can speak clearly, have him drink at least 2 glasses of water, each mixed with 3 tablespoons of activated charcoal.

Prevention: There is no field test to determine the presence of the toxin. The only sure prevention is to avoid eating shellfish. Some people have died after eating just one clam or mussel, others after eating many.

I. Devils club

Devils club is a large, spiny plant found in coastal forests. Wear leather gloves and thick, loose-fitting clothing when hiking through these areas. If spines become imbedded in the skin, remove them with sharp tweezers and wash the area well. Soaking the skin in warm water to soften it may help in spine removal.

VII. FIREARMS

If you have not been trained in the proper and safe use of firearms, do not use them. The University of Alaska will not be responsible for the actions of an individual who uses a firearm in violation of federal or state laws and regulations or University policy or regulation.

Guns are used for basically two purposes on remote travel; protection and food acquisition. If you use a gun for protection, keep it in the holster or in the container until needed. Never point the gun at anything you don't want to shoot. Be sure of your target and anything behind it. Never climb, run, or jump with a loaded firearm. Unload your firearm and keep it in a secure place when it is not in use.

If you are in a remote area and involuntarily run out of food and cannot expect to get food from another source soon enough to avoid loss of life or permanent health problems, you may kill wildlife for food. If this happens, you must salvage all meat and surrender what is left to the state after your rescue. You will be asked to fill out a statement about the circumstances.

VIII. DISTRESS SIGNALS

- **International distress signals:** Three loud sounds or any kind of SOS repeated at intervals, or three fires set in a triangle.
- **Noise:** To attract the attention of ground searchers, use whistles or guns or beat on metal.
- **Emergency Locator Beacon:** If you have an emergency locator beacon, switch on the manual switch and leave it on. A one-time signal is not good enough to pinpoint your location.

- **Flares and Rockets:** If you have flares or rockets, fire them straight up in the air when the search vehicle is pointed in your direction. Do not point them in the direction of the search vehicle.
- **Mirror Signal:** A flash of reflected light is one of the easiest and most effective signals when the sun is shining. It can be seen for many miles. Use a reflective mirror or any other reflective material.
- **Smoke by day, fire by night:** Put green boughs or grass on a hot fire to produce white smoke. Rubber or plastic will produce a thick black smoke, more visible on snow. Do not breathe smoke from these fires. Be ready to light a fire at night when you hear a plane. Oil-soaked rags should be ready to light three fires set in a triangle, 10 feet long on a side.

Standard ground to air signals: See codes below. Signals may be tramped in the snow, made of branches, cloth, or stone, trenches dug in the tundra, or patterns cut in vegetation. Try to make as big a color contrast as possible between your symbol(s) and the surrounding terrain. The symbol(s) should be 8 to 10 feet long and 3 feet wide for spotting by plane. The surfaces of your airplane or vehicle, which will generally be in sharp contrast to the surrounding area, are also a signal that can be seen from the air. In addition, you should use any means possible to try and attract an aircraft's attention: radio, flames, smoke, flares etc.

Require doctor - serious injury.....	
Require medical supplies.....	
Am going in this direction.....	➔
Unable to proceed.....	X
Yes.....	Y
No.....	N
All is well.....	LL

Air-to-ground signals:

Understand.....	Rock wings (in daylight) or make green flashes with signal lamp (night).
Do not understand.....	360 turn to right over party (in daylight) or make red flashes with signal lamp (night).
Proceed in this direction.....	Pass over party while rocking wings; proceed for 1 minute on heading desired, then return and repeat maneuver two more times.

IX. EMERGENCY & INSURANCE CONTACTS

PUBLIC RESPONSE	
ALASKA STATE TROOPERS	911
COAST GUARD	1-800-478-5555
POISON CONTROL	1-800-222-1222

U	Environmental, Health and Safety	907-786-1351
A	University Police	907-786-1120
A	Alaska Department of Environmental Conservation (DEC)	907-269-3063
		1-800-478-0084 (After Hours)

U	Risk Management	907-474-6771
A	Environmental Health & Safety	907-474-5413
F	University Police	907-474-7721
	Institute of Arctic Biology	907-474-7658
	IARC	907-474-1597
	Facilities Services	907-474-7000
	Alaska Department of Environmental Conservation (DEC)	907-451-2121
		1-800-478-0084 (After Hours)

U	Safety and Health Officer	907-465-6799
A	Facilities Services	907-465-6496
S	Juneau Campus Emergencies (after 4:30p.m. & before 8:00a.m.)	LJ Alarm: 907-789-8237
	Alaska Department of Environmental Conservation (DEC)	907-465-5340
		1-800-478-0084 (After Hours)

S	Risk Management	907-474-7465
W	Environmental, Health and Safety	907-474-5005
	Insurance Coverage	907-474-5278
	Claims Adjustment (Anchorage)	907-786-7755
	Claims Adjustment (Fairbanks)	907-474-1972
	Land Management (Anchorage)	907-786-7766
	Land Management (Fairbanks)	907-474-7212

INSURANCE CONTACTS

Each participant on a remote travel assignment is individually responsible for securing adequate insurance protection for themselves, whether it be through a University of Alaska program or private insurance. Emergency calls regarding insurance coverage can be directed to the Statewide Office of Risk Management, at 474-7465 or 1-800-478-8632 (in state only).

FOR UA EMPLOYEES	Health Claims Blue Cross Blue Shield of Alaska (Health Benefit Eligible Employees Only)	1-800-245-6784
(Includes eligible	On the Job Injuries (Workers' Compensation)	907-474-5322 or 1-800-478-8632 (in state only)

volunteers and graduate students on stipend – for eligibility confirmation call 907-474-7465.)	Travel Accident	Assistance Services (emergency medical, legal, travel): 1-800-626-2427 inside the U.S. or collect 0-713-267-2525 if outside the U.S.
	Foreign Travel	Worldwide Assistance Services, Inc. Call toll free (800) 766-8206 from within the USA or Canada. Call collect (202) 659-7777 if outside the USA or Canada
FOR UA STUDENTS	Accident Insurance Purchased Through SW Risk Management	907-474-7465 or 1-800-478-8632 (in state long distance)
	UAA Student Health Insurance	907-474-7465 or 1-800-478-8632 (in state long distance)
	UAF Student Health Insurance	907-474-7465 or 1-800-478-8632 (in state long distance)
	UAS Student Health Insurance	907-465-6457 Student Resource Center

X. UA FIELD STATIONS AND FACILITIES

UA field stations and facilities should you need to contact someone in your vicinity in an emergency:

UAA

- **Anchorage:** Elmendorf AFB Military Education Services, 3 MSS/DPE 4109 Bullard Ave, Suite 21, Elmendorf AFB, AK 99506, 907-753-0204
- **Anchorage:** Ft. Richardson Military Education Services, Kiska Hall, Bldg. 658, Rm. 131, Fort Richardson, AK 99505, 907-428-1228
- **Cordova:** Cordova Extension Center, Cordova, AK 99574, 907-424-7598
- **Eagle River:** Chugiak/Eagle River Campus, 10928 Eagle River Road, #228, Eagle River, AK 99577, 907-694-3313
- **Fairbanks:** Eielson AFB Military Education Services, 3124 Wabash Ave, Room #105, Eielson AFB, AK 99702, 907-372-3484
- **Fairbanks:** Ft. Wainwright Military Education Services, Ft. Wainwright, AK 99703, 907-353-6395
- **Glennallen:** Copper Basin Extension Center, Glennallen, AK 99588, 907-822-5574
- **Homer:** Kachemak Bay Branch, 533 E. Pioneer Ave, Homer, AK 99603-7624, 907-235-7743
- **Kodiak:** Kodiak College, 117 Benny Benson Drive, Kodiak, AK 99615, 907-486-4161
- **Palmer:** Matanuska-Susitna College, Palmer, AK 99645, 907-745-9726
- **Valdez:** Prince William Sound Community College, Valdez, AK 99686, 907-834-1612

UAF

- **Bethel:** Kuskokwim Regional Campus, 543-3400 (College of Rural Alaska, Fairbanks, 474-7106)
- **Brooks Range North Slope - Toolik Field Station:** (Institute of Arctic Biology, Fairbanks 474-7640)
- **Chatanika:** Poker Flat Research Range, 474-7015 (Geophysical Institute, Fairbanks, 474-7558)
- **Delta Junction:** Delta Rural Center, 895-4292 (College of Rural Alaska, Fairbanks, 474-7106)
- **Dillingham:** Bristol Bay Regional Campus, 842-5483 (College of Rural Alaska, Fairbanks, 474-

7106)

- **Fairbanks:** Ester Dome Observatory, 474-7502 (Geophysical Institute, Fairbanks, 474-7558)
- **Fort Yukon:** Fort Yukon Observatory (Geophysical Institute, Fairbanks, 474-7558)
- **Fort Yukon:** Fort Yukon Rural Center, 662-2521 (College of Rural Alaska, Fairbanks, 474-7106)
- **Galena:** Galena Rural Center, 656-1280, (College of Rural Alaska, Fairbanks, 474-7106)
- **Homer: (Halibut Cove):** Homer Field Station (Inst. of Arctic Biology, UAF 474-7640)
- **Juneau:** Juneau Center of Fisheries and Ocean Sciences, 11120 Glacier Hwy, 789-4442 (School of Fisheries/Ocean Sciences, Fairbanks 474-7531)
- **Kasitsna Bay:** Kasitsna Bay Laboratory, Seldovia, 235-4042 (School of Fisheries/Ocean Sciences, Fairbanks 474-7160)
- **Kodiak:** Fishery Industrial Technology Center, 202 Center St., 486-6034 (School of Fisheries/Ocean Sciences, Fairbanks 474-7824)
- **Kotzebue:** Chukchi Regional Campus, 442-3400 (College of Rural Alaska, Fairbanks, 474-7106)
- **McGrath:** McGrath Rural Center, 524-3074 (College of Rural Alaska, Fairbanks, 474-7106)
- **Nome:** Northwest Regional Campus, 443-2201 (College of Rural Alaska, Fairbanks, 474-7106)
- **Palmer:** Palmer Research Center 533 E. Fireweed, 746-9450 (Agricultural & Forestry Research Station, Fairbanks 474-7188)
- **Seward:** Seward Marine Center, 224-5261 (Institute of Marine Science, Fairbanks, 474-7824)
- **Tok:** Tok Rural Center, 883-5613 (College of Rural Alaska, Fairbanks, 474-7106)
- **Unalaska:** Interior Aleutian Center, 581-1666 (College of Rural Alaska, Fairbanks, 474-7106)

UAS

- **Juneau:** 11120 Glacier Highway, 465-6457
- **Ketchikan:** 2600 7th Avenue, 225-6177
- **Sitka:** 1332 Seward Avenue, 747-6653 (1-800-478-6653)

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