



UNIVERSITY
of ALASKA

Many Traditions One Alaska

REMOTE TRAVEL PLANNING & RESOURCE GUIDE

(C) Copyright 2003 University of Alaska

Published by the University of Alaska Risk Management Team
c/o System Office of Risk Services, University of Alaska,
Fairbanks, Alaska, 99775-5240

[Risk Management Team Contacts](#)

The University of Alaska provides equal education and employment opportunities for all, regardless of race, color, religion, national origin, sex, age, disability, status as a Vietnam era or disabled veteran, marital status, changes in marital status, pregnancy, or parenthood, pursuant to applicable state and federal laws.

6/9/2003

TABLE OF CONTENTS

I.	INTRODUCTION AND PURPOSE.....	4
II.	OVERVIEW.....	5
	A. Planning.....	5
	1. Remote Travel Pre-Trip Plan & Authorization.....	5
	2. Remote Travel Emergency Plan	5
	3. Survival Kit Check List.....	5
	B. Training.....	5
	1. Required Training for Remote Travel.....	5
	2. Recommended or Trip Specific Training and/or Travel Requirements.....	6
	3. Training Resources, Topics, and Schedules.....	6
	C. Insurance, Permits, & Indemnification.....	6
	1. Insurance Guide.....	7
III.	SAFETY AND SURVIVAL TIPS.....	8
IV.	BASIC SAFETY.....	9
	A. Travel.....	9
	1. Communications.....	9
	2. Motor Vehicle Travel.....	9
	3. Boat Travel.....	10
	4. Air Travel.....	10
	5. Snowmachines, ATVs, Four-Wheelers.....	11
	6. Travel on Foot.....	11
	7. Other Transportation Modes.....	12
	8. Survival in Emergency Situations.....	13
	B. Equipment, Body Gear, Food & Shelter.....	14
	1. Field Equipment.....	14
	2. Body Gear.....	15
	a. Clothing.....	15
	b. Footwear.....	16
	c. Hand, Face and Head Protection.....	16
	3. Food and Shelter.....	16
	a. Food.....	16
	b. Water	16
	c. Shelter.....	17
	(1) Winter.....	17
	(2) Summer	18
	(3) Unoccupied cabins/shelters.....	18
	d. Fire.....	18
	C. Health Concerns.....	19
	1. Frostbite.....	19
	2. Hypothermia.....	21

3.	Carbon monoxide poisoning.....	22
4.	Giardia.....	23
5.	Snow Blindness.....	23
6.	Immersion Foot.....	23
7.	Insect Bites.....	24
8.	Fish Poisoning.....	24
9.	Jellyfish Stings.....	24
10.	Devils Club.....	25
11.	Paralytic Shellfish Poisoning.....	25
D.	Wild Animals.....	26
1.	Bear Safety.....	26
2.	Moose and Other Large Animal Safety.....	27
3.	Animal Bites and Rabies.....	27
E.	Distress Signals.....	28
V.	FIREARMS.....	29
VI.	EMERGENCY CONTACTS.....	30
VII.	APPENDICES.....	31
Appendix A.	Remote Travel Pre-Trip Plan & Authorization Form.....	32
Appendix B.	Remote Travel Emergency Plan.....	34
Appendix C.	Survival Kit Check List.....	37
Appendix D.	First Aid Kit Check List.....	38
Appendix E.	Highway Travel Equipment Check List.....	39
Appendix F.	Boat Travel Equipment Check List.....	40
Appendix G.	Emergency Rations and Equipment List for All Aircraft In Alaska.....	41
Appendix H.	Visual Signals Between Ground and Aircraft.....	42
Appendix I.	UA Field Stations and Facilities.....	43
Appendix J.	Wind Chill Chart.....	45
Appendix K.	Comments and Advice from University Graduate Students, Staff, & Faculty.....	46
VIII.	REFERENCES.....	50
A.	Planning.....	50
B.	Travel.....	50
C.	Clothing, Shelter, Food, and Water.....	50
D.	Health, Safety, and First Aid.....	50
E.	Survival in an Emergency.....	51
F.	Mountaineering.....	51
IX.	DISCLAIMER.....	52

UNIVERSITY OF ALASKA

REMOTE TRAVEL PLANNING & RESOURCE GUIDE

I. INTRODUCTION AND PURPOSE

Travel in remote areas of Alaska presents many challenges. This Guide is to be used as a training, preparation, and resource tool for University of Alaska students, faculty, and staff who will travel to remote areas for business, research, or recreation. Emphasis is placed on the inclusion of information specific to field work in Alaska that is not easily found elsewhere. Information is included on modes of 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 and use pertinent sections for preparation and training on how to work and recreate safely in the wilderness. Planning for remote travel in Alaska is crucial as individuals are typically removed from sources of supplies and medical assistance. The goal of this guide is to increase awareness and knowledge of wilderness travel health and safety issues and promote the best possible chance for crisis free trips.

There are several additional training and preparation recommendations or requirements that should be completed to supplement the information and advice found in this Guide. For example, First Aid and CPR training and certification, firearms usage, wilderness survival, or water safety may be part of your preparation, depending on where you are heading, the size of your group, or the kinds of wilderness you anticipate you will encounter. References are given at the end of this Guide for published information available on other important field safety topics such as mountaineering. Prepare accordingly to minimize potential adverse impacts. You will be required to complete the various checklists referenced herein and obtain all required approvals for activities PRIOR TO travel.

II. OVERVIEW

A. PLANNING

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.

There are three required plans/checklists that must be completed and attendant tasks accomplished before each field season or remote trip. Several other check lists are provided in the appendices of this guide to assist you in your planning purposes.

- 1) Remote Travel Pre-Trip Plan & Authorization: Prior to each trip, a detailed plan that addresses trip-specific details must be prepared, approved and communicated with appropriate personnel prior to finalizing the trip plans and encumbering funding. This pre-trip plan must provide specific information regarding participants, trip route, conveyance methods, communication and emergency plans, and training needed relevant to the trip. An approval process for remote travel should be established at each campus. This form can be found in Appendix A.
- 2) Remote Travel Emergency Plan: This plan is to be completed and left on file to record trip specifics, communications and emergency plans. It must be approved in accordance with your campus policy or procedure prior to departure. This form can be found in Appendix B.
- 3) Survival Kit Checklist: This check list will help you put together your survival kit and can be found in Appendix C.

B. TRAINING

Training for a successful remote travel includes relevant preparation of the participants. If you find that a necessary training topic is not available at your institution, consult with your department head or risk/safety departments for assistance in obtaining the appropriate training.

- 1) Required Training for Remote Travel
 - a. CPR and First Aid – The University of Alaska requires that at least one employee in each remote travel group have current certifications in first aid and CPR (cardiopulmonary resuscitation).
 - b. Driver Training – If travel plans include driving, the designated drivers must possess current University-issued driver training certification in addition to a valid State of Alaska driver's license with endorsements appropriate to the vehicle to be driven and its cargo. In addition, drivers must be accepted under individual MAU driving requirements.
- 2) Recommended or Trip Specific Training and/or Travel Requirements

Department deans and directors, in conjunction with campus/institute risk management and safety professionals, will define training programs and determine trip specific training requirements. Depending on travel location, duration and anticipated hazards, training and requirements may include:

- Bear protection
- Boating safety
- Aircraft safety
- Wilderness survival
- ATV safety
- Firearm safety
- Physical Examinations
- Hepatitis A or other vaccinations
- Special Vehicle Operations
- Hazardous Materials Awareness
- Permits and Fees
- Diver certification (current) and coordination with UAF Diving Committee required PRIOR to trip. See: <http://www.sfos.uaf.edu/dive/> for further information.

3) Training resources, topics, and schedules can be found at the following web sites:

UAA: <http://ehsrms.uaa.alaska.edu/>

UAF: <http://www.uaf.edu/safety/welcome.htm>

UAS: http://www.uas.alaska.edu/facilities_services/safety/

SW: http://www.alaska.edu/risksafety/c_ehs/

C. INSURANCE, PERMITS & INDEMNIFICATION

Insurance options should be explored and coverage procured, if needed, well in advance of travel. Below is a chart of the various insurance programs and options available. **Each participant on a remote travel assignment is individually responsible for securing adequate insurance protection for themselves, whether through a University of Alaska program or private insurance.** Accident insurance is strongly recommended for student participants if they do not otherwise have insurance available to them.

Many governmental entities are beginning to require permits, certificates of insurance, and bonds for travel in their jurisdictional areas. Contact your local risk management office for assistance in obtaining this coverage and processing the required paperwork. In addition, most permits contain indemnification agreements that must be approved by the office of General Counsel PRIOR to the department signing. Therefore, begin the permit/application process well in advance of your trip (a MINIMUM of two weeks) so that you can avoid any last minute hold-ups due to insurance or legal problems.

1.

INSURANCE GUIDE

FOR UA EMPLOYEES		
<p>(Includes eligible volunteers and graduate students on stipend – for eligibility confirmation call 907-450-8157.)</p> <p>Except for the health insurance which covers only benefit eligible employees, the following coverages are automatic for all employees and do not require application:</p>		
Insurance	Coverage	Contact
Blue Cross Blue Shield of Alaska (For Health Benefit Eligible Employees Only)	Health Insurance (non-work related medical conditions)	Campus Human Resource Department or: http://www.alaska.edu/hr/
Workers' Compensation	On the Job Injuries or Illness	System Office of Risk Services 907-450-8156 or 1-800-478-8632 (in state only) http://www.alaska.edu/risksafety/e_claims/file-a-claim/workers-compensation/
Travel Accident Insurance	Accidental Death & Dismemberment & Assistance Services	Statewide Office of Risk Management 907-450-8157 or 1-800-478-8632 (in state only) http://www.alaska.edu/risksafety/b_insurance/insurance-coverage/travel-accident/
Foreign Travel	Liability Coverage, Including Auto Liability, & Assistance Services.	Statewide Office of Risk Management 907-450-8157 or 1-800-478-8632 (in state only) http://www.alaska.edu/risksafety/b_insurance/insurance-coverage/foreign-liability/
FOR UA STUDENTS		
<p>This coverage is NOT automatic. Students or departments must apply for this insurance coverage:</p>		
Student Travel Accident Insurance	Accident Insurance (does not include health coverage, e.g. appendicitis, heart problems, etc.)	Statewide Office of Risk Management 907-450-8157 or 1-800-478-8632 (in state only) http://www.alaska.edu/risksafety/b_insurance/insurance-coverage/student-accident/
Student Health Insurance	Health Insurance	UAA Student Health Center: 907-786-4040 Mega Life Student Insurance: 1-800-767-0700 or https://www.uhcsr.com/
		UAF Student Health Center: 907-474-7043 http://www.uaf.edu/chc/index.html
		UAS Student Resource Center: 907-796-6000 http://www.uas.alaska.edu/health/index.html
FOR NON AFFILIATED PARTICIPANTS		

Visitors from other institutions and other non-affiliated persons must procure their own insurance coverage. UA does not have the ability to provide insurance protection to non-affiliated individuals other than for those who qualify through the Foreign Visitor Insurance program. For further information about this coverage or for questions, please contact the System Office of Risk Services 907-450-8157 or 1-800-478-8632 (in state only),

http://www.alaska.edu/risksafety/b_insurance/insurance-coverage/foreign-visitor/

If a UA sponsored remote trip will involve non-affiliated persons, please contact your local risk/safety office for consultation on best course of action for insurance options.

UAA: <http://www.uaa.alaska.edu/ehsrms/>

UAF: <http://www.uaf.edu/safety/>

UAS: http://www.uas.alaska.edu/facilities_services/safety

III. 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.
8. Fuel stoves outside tents or shelters; fumes could be toxic or could cause an explosion.
9. Don't light or use cooking stoves inside unventilated tents.
10. Make sure your tent is fire-resistant if you are going to have any open flames in it.
11. Do not pack liquid fuel for stoves with food; a spill could contaminate and ruin your food.
12. Store emergency food, gear, shelter, and sleeping protection away from main camp area; "do not put all your eggs in one basket."
13. 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.

IV. BASIC SAFETY

A. TRAVEL

1. Communications

There are a variety of transportation modes that may be employed on remote travel trips. Each type of travel requires different knowledge and preparation. Regardless of the mode of transportation chosen, communications in an emergency situation are of utmost concern. When traveling, make sure that a means of communication such as a satellite phone, radio, cell phone (if you will be within coverage range), or emergency locator beacon are include in your emergency survival kits. Schedule periodic radio or telephone communication with a base of operations whenever you are traveling and document the schedule in your Remote Travel Emergency Plan (Appendix B).

2. Motor Vehicle Travel

A Highway Travel Equipment Checklist can be found in Appendix E. This checklist can be modified dependant upon the season, location, and length of your trip.

Cars and Trucks: The Alaska Section of Community Health and Emergency Medical Services (EMS) and the Alaska Highway Safety Office publishes a brochure entitled Help Along the Way - Emergency Medical Services For Alaska Travelers that can be found on the web at: <http://chems.alaska.gov/EMS/Assets/Downloads/HAW.pdf>

This is an excellent brochure providing emergency contact information for places along the major Alaska highway systems, including the marine highway. Other general safety information is included such as a suggested list of emergency equipment to carry in your car, first aid information, and accident procedures. Copies of this brochure can be printed from your computer or can be obtained at the EMS office in each major Alaskan town.

Emergency equipment should be carried in your vehicle. A vehicle will provide shelter if you are stranded. If there is injury, the blankets, extra clothing, water, etc. will help occupants survive until assistance arrives.

Buses and Vans: Special safety precautions exist for travel in these vehicles. Drivers must be certified in accordance with any applicable laws, regulations, or policies through your campus driver training program:

UAA: <http://www.uaa.alaska.edu/ehsrms/>

UAF: <http://www.uaf.edu/safety/>

UAS: http://www.uas.alaska.edu/facilities_services/safety

If 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 IV.C.3, or further information if you are stranded with a vehicle.

3. Boat Travel

A Boat Travel Equipment Checklist can be found in Appendix F. This checklist can be modified dependant upon the season, location, and length of your trip.

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 Coast Guard rated and approved life vests whenever they are on a watercraft. When traveling in any boat, be prepared in case you land in the water. Keep your gear dry, including survival kit. Pack everything in heavy duty waterproof bags attached to a flotation device.

- **Motorized Craft:** Carry maps, tools, and parts for engine repair with you in motorboats. Make sure the vessel has the standard Coast Guard approved equipment on board.
- **Rafts:** A raft will need specialized provisions, including a manually operated air pump, a patch kit, rolls of duct tape, a bow rope, and bailing buckets (unless the raft is self-bailing). Rafts are generally rated by maximum allowable weight. Rafts must not be loaded with supplies beyond their rated weight capability, and cargo should be secured at all times while on a moving body of water.
- **Canoes:** Canoes are generally not rated for more than two people, are inherently unstable, and subject to easy tip-over even in calm water. Canoes are not recommended for use on open seas. Much of the same advice provided for rafts is also applicable for canoes. Special training to use a canoe should be obtained before using one on a remote trip.
- **Kayaks:** A kayak is quite similar in application to a canoe, except that a kayak can be used on open seas with proper skirting. Special training to use a kayak should be obtained before using one on a remote trip.

4. Air travel

An Emergency Rations and Equipment List for All Aircraft in Alaska (from Alaska statute 02.35.110) can be found in Appendix G.

Section 02.35.110. of Alaska Statute 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.

As an individual, be prepared in case of the crash of a light plane. Dress to survive the worst terrain and climate over which your air route will take you. Carry extra clothes and

your emergency survival gear. Since exiting a downed aircraft may be difficult, a hack saw, pry bar, large pliers and other tools should be in an accessible place known to all passengers. Wear leather gloves while traveling in small aircraft to provide the ultimate protection to your hands. Do not smoke around fueling operations.

Do not let yourself be dropped off by a pilot without a sleeping bag and your survival kit. The weather may turn bad before the rest of the gear can be flown in.

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:
 - Approach or leave in pilot's field of vision, usually from the front of the aircraft.
 - Approach or leave machine in a crouching manner (to stay below the main rotor).
 - Stay away from the tail rotor.
 - Approach or leave on the down slope side.
 - 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.

5. Snowmachines, ATVs, Four Wheelers

When traveling by snowmachine, all terrain vehicle (ATV), or four-wheeler, anticipate an emergency and 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 farther than you can walk back. Always carry snowshoes with you when traveling on a snowmachine. Do not use these vehicles without proper training.

6. Travel on foot

Carry your emergency survival kit high energy food and adequate water in all seasons. Due to general inaccessibility of large parts of Alaska, many areas can only be reached by foot. Hiking and camping are popular recreational activities all over the country, however, remember that Alaska is rugged and you will generally be much farther from other people than you would be in other states. You **MUST PLAN AHEAD** for all possibilities.

a. 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.
- If you will be working in mountainous terrain, learn basic mountain climbing techniques from experts before the trip.

b. Winter

Travel in cold weather requires more rigorous preparation. Knowledge of snow and ice conditions as well as general camping techniques are important and they should be learned from experienced outdoor travelers. 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.
- A solid ice cover on most northern streams and rivers in Alaska provides a good trail from November through March and sometimes April, except for rivers that may remain open down river from the vicinity of a lake outlet or a town. 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.

7. Other Transportation Modes

Sometimes travel to or at a field location is accomplished by other methods, such as by skis or dog sled. Be sure to give any alternative transportation modes advance consideration in your planning process. For example, you may want to consider bringing skis and/or snowshoes to a field location when there is a chance that ice and snow will be encountered during the field trip or research season. Traveling by dog sled would obviously entail pre-arranging for skilled drivers and other the inclusion of additional supplies for dog care and feeding.

8. Survival in Emergency Situations

The definition of an emergency varies, and only you can know if you are in a survival situation, but do not underestimate the importance of considering that real 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. The decisions made early in a situation will often have the greatest impact on either a good or bad outcome.

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:

- a. Know and respect your physical capabilities;
- b. Do not travel without proper clothing (including footwear);
- c. Have adequate food, shelter, and signals for the weather conditions and country;
- d. Make careful plans;
- e. 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.
- f. 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;
- g. 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;
- h. Travel slowly, conserving energy, and taking regular breaks of sufficient duration to recover your strength and energy;
- i. Stay near open areas;
- j. Camp early in the afternoon, near water and timber, if possible.

B. EQUIPMENT, BODY GEAR, FOOD AND SHELTER

1. Field Equipment

A variety of equipment can and should be used to support remote travel in Alaska. These include items for field studies, communications, shelter, protection and survival. All should be considered in your planning.

- Cellular or Satellite Phones: A critical need in the bush is the ability to communicate with others; this is particularly true regarding your safety and well-being. If you are lost or hurt (or both) your survival may depend on how quickly you can contact someone who can effect rescue. Be sure to carry a cell or satellite phone and include its number on your emergency plan. Satellite phones are available for checkout at each campus.
- GPS and Monitoring Devices: These electronic devices can help you identify where you are, or at least provide a signal that can be monitored in the event that you are overdue from a field trip.
- Personal Computers: If one of these is part of your field trip, be sure to properly protect it from damage.
- Portable Toilets
- Firearms and Ammunition: Firearms may be needed for protection from wild animals. You must receive training and complete UA permission paperwork if you plan to take a gun on your trip. Do not bring your own personal firearm unless you have received permission from the proper authorities. Discharging a firearm should only be done in an emergency, such as self-protection or signaling if you are lost.
- Cutting Tools (Knives, Axes and Hatchets): It's a good idea to carry cutting tools that can be utilized to enhance your comfort, safety or survival chances. Keep them sharp and in an accessible location.
- First Aid Kit
- Survival Kit
- Equipment Protection: Be sure to carry safety, survival, or research equipment in waterproof containers. Keep all equipment in good working condition, and ready for use if needed.

2. Body Gear

a. Clothing

Dressing loose and in layers is the primary concept for comfort and safety. For warmth, choose two-way zippers, storm flaps, insulated pockets, adjustable cuffs, collars, raglan sleeves (eliminates shoulder seams and allows more movement), hi-length style, and hood. Wear clothes in layers, with each layer large enough to fit comfortably over the underlying layer. For summer use, be sure that clothing covers and protects skin from too much sun exposure, insects, and rapid changes in temperature found in the Alaskan wilderness.

FIVE WAYS BODY HEAT IS LOST	
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.

THREE LAYERING CONSIDERATIONS	
Inner (wicking)	This primary layer should be next to your skin and should consist of fabrics that will wick the moisture away from your skin. Good fabrics include polypropylene, thermax, and silk. Do not wear cotton. Wet fabrics next to your skin will make you feel cold and conduct more heat away 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.

b. Footwear

Proper footwear is critical to comfort, protection and survival. Be sure to wear the right kind of footwear for the areas where you will be traveling. In most cases, boots are needed to protect people from dampness, insect bites, and ensure that feet stay dry and healthy. Feet stay warmer if there is a thick layer between the foot and the ground and felt boot liners are excellent for this. Footgear should be waterproof for travel in almost all Alaskan locations. Boots should be broken in before going on a long trip, and they should be warm and comfortable. Wear a thin sock liner and sufficient outer sock to provide good insulation between your feet and the ground. Do not wear cotton socks.

c. Hand, Face and Head Protection

This includes items such as gloves, mittens, masks, safety glasses, sunglasses, goggles, hats, head nets, and hard hats. Wear a waterproof hat to protect from rain and heat loss. Up to 50 percent of body heat loss occurs from the head and neck areas. Mittens, rather than gloves, provide maximum protection and warmth, but you should also have gloves available. Don't forget to use layers on your hands and feet. Mittens with a thin glove liner work very well. Do not wear gloves that restrict circulation to the hands.

3. Food and Shelter

a. Food

Unless you have had a lot of experience with bush-living, hunting, and fishing, you should plan to carry food with you for the trip. Packaged, dehydrated food will probably be the choice if you are backpacking. If you will be operating from a base camp or traveling by boat, you will have plenty of room for more interesting cuisine. Wild fish and game in Alaska is protected. Hunting and fishing season information can be obtained from the Alaska Department of Fish and Game: <http://www.state.ak.us/adfg/adfghome.htm>.

Although much wild vegetation in Alaska is nutritious, there are several types of plants that are poisonous, including baneberry and water hemlock. Reference volumes by Heller (1993) and Viereck (1998) contain information on edible and poisonous plants. See References, section VIII.C. Educate yourself about these plants.

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.

b. Water

You can probably survive for a week or more without food, but you cannot survive more than a few days without water. You should take in two quarts of water each day to maintain efficiency and health. If you will be in an area without fresh water, be sure to carry enough water with you for the amount of time you expect to be gone and/or some means to purify 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 that you can purify before drinking. Some of your gear may be able to serve double duty as a rain collecting device. 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 ground water without treating it. *Giardiasis* is very common in fresh waters in Alaska. It is caused by the parasite *Giardia lamblia*, which is in the form of a cyst during part of its life cycle. Feces of beavers and other carrier animals contain the cysts that can be transmitted to humans who drink the contaminated (untreated) water. 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

Carry material for making a shelter in your survival kit. You can use parachute cloth, a large sheet of plastic, or a two-person tube tent. You will often be able to find logs, rocks, or caves to supplement your own supplies for making a 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 with you 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. 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.

C. HEALTH CONCERNS

Following are some health and safety conditions common to travel in Alaska including a general description, prevention techniques, symptoms, and treatment recommendations:

1.	FROSTBITE
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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 Appendix J. for Wind Chill Chart.</p>
	PREVENTION
	Avoid tight clothing that reduces circulation. (See Section IV. B. 2. 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.
	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.

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.

2.	HYPOTHERMIA
<p>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.</p>	
PREVENTION	
<p>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.</p>	
SYMPTOMS	
<p>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!</p>	
TREATMENT	
<p>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.</p> <p>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.</p>	

3.	CARBON MONOXIDE POISONING
<p>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.</p>	
PREVENTION	
<p><u>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!</u> Run vehicles and heaters periodically, not continuously. In a motor vehicle, make sure the tail pipe is clear of snow and mud. Make sure there is adequate ventilation, with a window slightly open. Be sure you are upwind of vehicle exhaust so that it is not drawn into the vehicle. <u>NEVER GO TO SLEEP IN A RUNNING VEHICLE OR VESSEL.</u></p>	
SYMPTOMS	
<p>You cannot see, smell, or taste carbon monoxide. Symptoms can feel like flu symptoms. Be aware and watch for the following:</p> <ul style="list-style-type: none"> ▪ 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	
<p>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.</p>	

4.	GIARDIA
<i>Giardiasis</i> is caused by the parasite <i>Giardia lamblia</i> . 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.	
PREVENTION	
Water from streams, lakes, ponds, and other outdoor sources must be disinfected before drinking. See Section IV. B. 3. b. Water for disinfecting methods.	
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.	

5.	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.	
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.	
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.	

6.	IMMERSION FOOT (TRENCH FOOT)
Feet that endure prolonged exposure to wet and cold can become saturated.	
PREVENTION	
Change socks whenever they become wet.	
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.	

7.	INSECT BITES
	PREVENTION
	A smoky fire helps keep insects away. Some individuals may experience minor skin irritations with commercial mosquito repellants. If repellent 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.
	TREATMENT
	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. Some individuals are allergic to some insect bites. Be sure to carry appropriate medication with you to treat severe allergic reactions if recommended by your health care provider.

8.	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.
	TREATMENT
	Remove the spines from the skin, wash the area well, and apply an antiseptic.

9.	JELLYFISH STINGS
	TREATMENT
	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.

10.	DEVILS CLUB
Devils club is a large, spiny plant found in coastal forests.	
PREVENTION	
Wear leather gloves and thick, loose-fitting clothing when hiking through these areas.	
TREATMENT	
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.	

11.	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.	
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.	
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.	

D. WILD ANIMALS

1. 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.

2. 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.

3. 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.

E. DISTRESS SIGNALS

When you need help in an emergency, you need to attract attention. Following are a few of the ways you can do this; your choice will depend on your location, type of terrain, distance from help, weather, and materials available.

- **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.
- **Laser Signaling Devices:** Laser flares are now commercially available and are reasonably priced. These devices can be used repeatedly and more often than chemical flares and rockets and are much more effective over long ranges.
- **Iridium Telephone:** These phones use geosynchronous satellites that are capable of relaying voice information you supply. Be sure to check out one of these phones if you plan to be in a remote part of Alaska. Cellular phones generally do not work much beyond densely inhabited areas.
- **GPS:** A global positioning system, used in conjunction with an Iridium telephone, should allow you to inform potential rescuers of your exact location.
- **Wireless Internet PC Connection:** If you have this feature in a PC, use it to send a message! Tell them you are in trouble and where you are, if you know.
- **Emergency Signal Transponder:** The handy devices are often found in airplanes, but a portable version is also used by snowmobilers or backcountry skiers (they have limited range but transmit an electronic signal that can be monitored).
- **Visual Signals Between Ground and Aircraft:** See Appendix H.

V. FIREARMS

You must receive training and complete UA permission paperwork if you plan to take a gun on your trip. Do not bring personal firearms unless you have received permission. Discharging a firearm should only be done in an emergency, such as self-protection or signaling if you are lost.

The possession of firearms, explosives and prohibited weapons is governed by Board of Regents Policy and Regulation 02.09.02: <http://www.alaska.edu/bor/policy-regulations/>. Activities involving firearms, explosives and/or reloading activities may be carried on at the University only under supervised educational, recreational, professional or research programs where such activities are expressly authorized in advance by the appropriate chancellor or chancellor's designee. Loaded or unloaded firearms may not be carried or stored on University property, in University buildings, or in vehicles on University property, without the prior written permission of the appropriate chancellor or chancellor's designee, except for firearms being transported directly to or from an activity authorized as above.

No University of Alaska firearm may be issued to an individual who is not a University of Alaska employee. UA employees must successfully pass a gun safety training course and undergo felony screening per federal and/or state requirements. 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 emergency 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. Always use the correct ammunition for your gun and do not shoot it unless you know you have the proper ammunition. Wear eye and ear protection. Alcohol, as well as other substances that may impair normal mental or physical bodily functions, must not be used before or while handling or shooting guns. Unload your firearm and keep it in a secure place when it is not in use. Store firearms so that they are not accessible to unauthorized persons and safeguard the gun case key or combination lock.

Special arrangements may need to be made when transporting firearms in vehicles or airplanes. During transport, firearms **MUST** be unloaded (guns should always be unloaded until ready to use) and packed in a locked hard-sided gun case. Check with your commercial airlines or charter airline to determine whether firearms are allowed in checked baggage on your flight. Ask about any limitations or fees that may apply. Firearms must be declared to the airline at check-in.

Ammunition is **NOT** permitted in your carry-on baggage on commercial airlines, but depending on airline policy, may be included with checked baggage. Ammunition may be packed in the same locked container as the firearm, so long as it is not loaded in the firearm. Small-arms ammunition must also be declared to the air carrier and placed in an appropriate container and securely packed in fiber, wood or metal boxes or other packaging specifically designed to carry small amounts of ammunition.

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.

VI. EMERGENCY CONTACTS

These references are included in your Remote Travel Safety Guide. If there are additional resources that may be helpful on your trip, please take the time to record them in your copy of the Remote Travel Safety Guide.

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	907-474-7889
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	907-450-8150
W	Environmental, Health and Safety	907-450-8154
	Insurance Coverage	907-450-8157
	Claims Adjustment (Anchorage)	907-786-7755
	Claims Adjustment (Fairbanks)	907-450-8152

VII. APPENDICES

- A. Remote Travel Pre-Trip Plan & Authorization Form
- B. Remote Travel Emergency Plan Form
- C. Survival Kit Checklist
- D. First Aid Kit Check List
- E. Highway Travel Equipment Check List
- F. Boat Travel Equipment Check List
- G. Emergency Rations and Equipment List for All Aircraft In Alaska (from Alaska statutes 02.35.110)
- H. Visual Signals Between Ground and Aircraft
- I. UA Field Stations and Facilities
- J. Wind Chill Chart
- K. Comments and Advice From University Graduate Students, Staff, & Faculty

Appendix A.

UNIVERSITY OF ALASKA
REMOTE TRAVEL PRE-TRIP PLAN & AUTHORIZATION

This form must be completed and submitted to the designated department head and campus safety professional for review and approval before travel plans are finalized and funds encumbered.

Department: _____ Campus: _____ Date: _____

Trip Leader/PI: _____ Phone: _____

Proposed Dates of Travel – From: _____ To: _____

Destination(s) From: _____ To: _____

Trip Type: Research Joint Research Project Class Activity Recreational Activity

Other (describe): _____

Trip Purpose: _____

Number of Participants: _____ Will Minors (under age 18) Participate? Yes No

Participant Status and Number: UA Employees # _____ Grad Students # _____ Undergrad Students # _____

Unaffiliated Other (describe): _____ # _____

1. Mode(s) of Travel (automobile, boat, airplane, snowmachine, skis, etc):

Date(s)	Vehicle Description	Distance (time/miles, etc.)

2. Travel Route Planned and Location of Field Site(s) (Attach map)

3. Special Training Needed (First aid, CPR, firearms, rock climbing, boat handling, bear awareness, diving*, etc.):

Name of Trainee	Job Title	Training Subject	Date Scheduled
		CPR & First Aid (must have!)	

4. Emergency Equipment To Be Carried (first aid kit, survival kit, firearm, etc.):

Quantity	Type	Quantity	Type

5. Communication Equipment To Be Carried:

Quantity	Type	Frequency/Channel

6. Emergency Plan For Evacuation (communication and travel): _____

Submitted By: _____ Date: _____
 (Name) (Title)

Approved By: _____ Date: _____

Department/Institute Director

Approved By: _____ Date: _____
 Safety Professional

*Diving: Documentation of each research diver's current certification status must be attached. The documentation should contain certification status, depth of certification, date of last physical examination, emergency diver evacuation plan, and signature of the diving officer. Prior to any diving activity, the principle investigator must coordinate with the UAF Diving Committee.

Appendix B.

UNIVERSITY OF ALASKA
REMOTE TRAVEL EMERGENCY PLAN

This form must be completed and submitted to the designated department head and campus safety professional before departure.

Department: _____ Campus: _____ Date: _____

Trip Leader/PI: _____ Phone: _____

Departure Date: _____ Return Date: _____

Destination(s) From: _____ To: _____

Trip Purpose: _____

1. Method(s) of Travel:

Date(s)	Vehicle Description	Distance (time/miles, etc.)

2. Travel Route Planned and Location of Field Site(s) (Attach map)

3. Checkpoints

Date	Location	Time

--	--	--

PAGE 1 OF 3

4. Training Received (First aid, CPR, firearms, rock climbing, boat handling, bear awareness, diving*, etc.)

Name	Job Title	Date of Training	Training Topic

5. Emergency Equipment To Be Carried (first aid kit, firearm, etc.)

Quantity	Type	Quantity	Type

6. Communication Equipment To Be Carried (types, frequencies and channels)

Quantity	Type	Frequency/Channel

7. Communication Schedule

Date	Time	Person to be Contacted	Method of Contact

8. Emergency Plan For Evacuation (communication and travel)

principle investigator must coordinate with the UAF Diving Committee.

PAGE 3 OF 3

SURVIVAL KIT CHECK LIST

Your survival kit should be put together in a waterproof pack and not used for anything other than an emergency situation. Keep this survival kit separate from your regular camping gear. Do NOT borrow from it for everyday use, but DO check periodically to see that batteries in the flashlight are still good and there is still spare fuel for the stove.

SHELTER AND SURVIVAL EQUIPMENT	
	Instant shelter (plastic 7 bushel lawn bag or "tube tent")
	Sleeping bag, space blanket, foam pad
	Extra clothing
	Spare sunglasses
	Knife
	Flashlight and fresh batteries, string, twine, or dental floss
	Duct tape
	Rope and/or parachute cord
	First aid kit (see Appendix D)
	Note book and pencil

SIGNALING CAPABILITY	
	Reflective signaling device (mirror, smooth foil)
	Noise maker (whistle)
	Flares, die makers
	Radio
	Emergency locator beacon
	Iridium telephone
	GPS
	Personal transponder

FIRE STARTER (in foil or metal container)	
	Butane lighter (except in aircraft)
	Waterproof matches (dip them in nail polish or wax)
	Candle
	Chemical heat tablets

FOOD, HOT DRINK CAPABILITY	
	Tea, coffee, cocoa, sugar, instant soup, bouillon cubes
	Dehydrated food
	Snacks - crackers, bulk brown sugar
	Water purification tablets
	Small camp stove and fuel
	Matches
	Mess kit (Small pot, pan, cup, utensils)

FIRST AID KIT CHECK LIST

BANDAGES AND DRESSINGS	
	Band-Aids
	Butterfly bandages
	Roller gauze
	Sterile gauze pads
	Sterile absorbent cotton
	Triangular bandage
	Elastic bandage
	Sterile compress or sanitary napkin
	Moleskin
	Adhesive tape

TOOLS/EQUIPMENT	
	Needle, thread
	Scissors
	Tweezers
	Thermometer
	Wire mesh splint/inflatable splint, SAM Splint
	Single edge razor blade
	Wash/dry towelettes

MEDICATIONS	
	Antiseptic, Betadine, Zepharin
	Antibacterial soap, pHisoHex
	Burn ointment
	Iodine applicators
	Ophthalmic drops (sterile non-medicated)
	Insect repellent and head nets
	Sun screen/block
	Lip salve
	Personal prescription & over-the-counter medicines

Appendix E.

HIGHWAY TRAVEL EQUIPMENT CHECK LIST

	Blankets for each passenger
	Extra clothing for each passenger
	Local and State Maps
	Drinking Water
	Full tank of gasoline - always drive on upper half
	Matches and candles
	Fire extinguisher
	Flashlight and spare batteries
	Emergency flares and reflectors
	Tow cable
	Jumper cables
	Come-along or winch
	First aid kit (bandages, medicines, etc.)
	Basic tool kit (pliers, screwdriver, wrench)
	Survival kit (capability for shelter, fire starting, signaling, food and drink)
	For winter travel: chains, ice scraper, sack of sand, shovel

BOAT TRAVEL EQUIPMENT CHECK LIST

MOTORIZED VESSELS	
	Standard Coast Guard-approved equipment
	Personal flotation devices (Type V or III minimum) for each person aboard
	Anchor and line
	Sea anchor and line (if going into open seas)
	Fire extinguishers (current inspection)
	Signaling devices (flares, die markers, horn, radio, flags)
	Flashlight (and spare batteries – tested)
	Tool kit
	Waterproof dry bags (for packing gear)
	Blankets (preferably wool) for each person
	Extra clothing for each person, including rainwear
	First aid kit
	Survival kit
	Fresh potable water
	Bailing capability (buckets or pump)
	Compass
	Nautical charts
	Boater's safety handbook
	Survival suits (body heat conserving flotation device) for each person aboard.
RAFTS, CANOES, & KAYAKS	
	Personal flotation devices for each person aboard
	Waterproof dry bags (for packing gear)
	Extra paddles
	Patch kit
	Duct Tape
	Bow Rope
	First aid kit
	Survival kit (capability for shelter, fire starting, signaling, food and drink)

EMERGENCY RATIONS AND EQUIPMENT LIST FOR ALL AIRCRAFT IN ALASKA

Alaska Statute, Sec. 02.35.110. Emergency rations and equipment.

(a) An airman may not make a flight inside the state with an aircraft unless emergency equipment is carried as follows:

(1) the following minimum equipment must be carried during the summer months:

- (A) rations for each occupant sufficient to sustain life for one week;
- (B) one axe or hatchet;
- (C) one first aid kit;
- (D) an assortment of tackle such as hooks, flies, lines, and sinkers;
- (E) one knife;
- (F) fire starter;
- (G) one mosquito headnet for each occupant;
- (H) two small signaling devices such as colored smoke bombs, railroad fuses, or Very pistol shells, in sealed metal containers;

(2) in addition to the equipment required under (1) of this subsection, the following must be carried as minimum equipment from October 15 to April 1 of each year:

- (A) one pair of snowshoes;
- (B) one sleeping bag;
- (C) one wool blanket or equivalent for each occupant over four.

(b) However, operators of multi-engine aircraft licensed to carry more than 15 passengers need carry only the food, mosquito nets, and signaling equipment at all times other than the period from October 15 to April 1 of each year, when two sleeping bags, and one blanket for every two passengers shall also be carried. All of the above requirements as to emergency rations and equipment are considered to be minimum requirements which are to remain in full force and effect, except as further safety measures may be from time to time imposed by the department.

VISUAL SIGNALS BETWEEN GROUND AND AIRCRAFT

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.....	L L

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.

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
- **Anchorage:** Goose Lake Campus, UPD, 3211 Providence Drive, Anchorage, AK 99508, 907-786-1120
- **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)

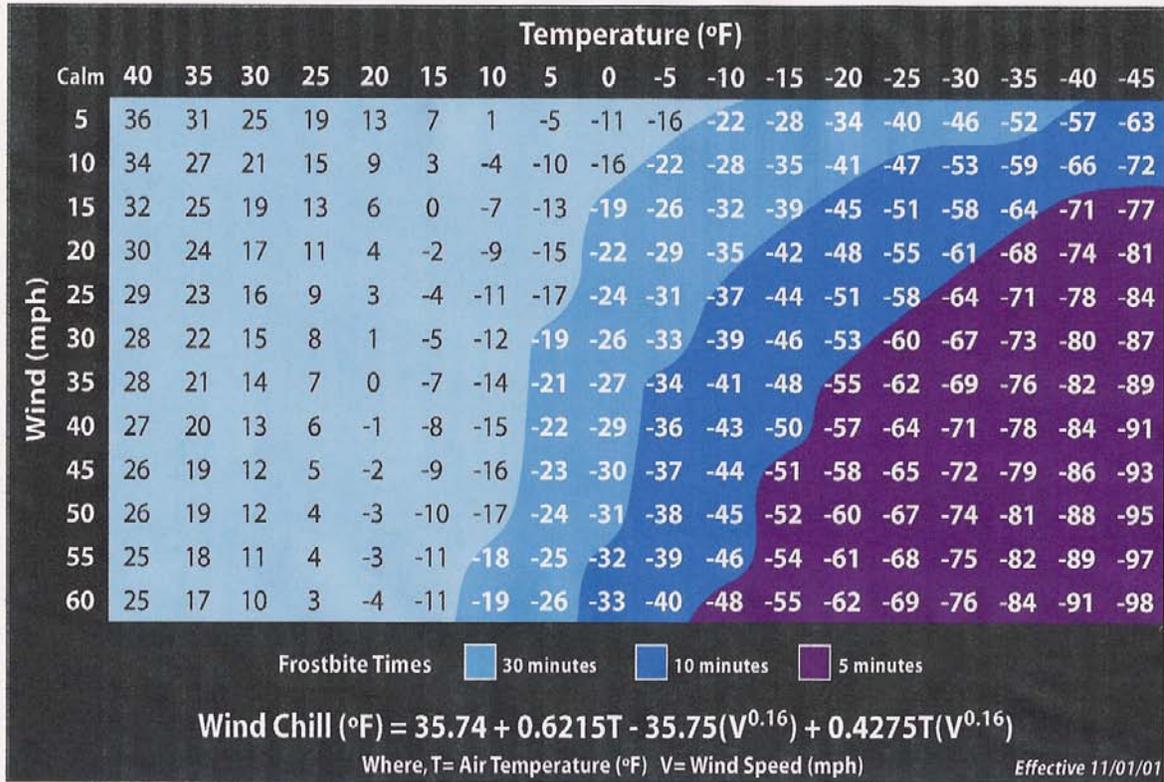
- **Nome:** Northwest Regional Campus, 443-2201 (College of Rural Alaska, Fairbanks, 474-7106)
- **Palmer:** Palmer Research Center 533 E. Fireweed, 746-9450 (Agricultural & Forestry Research Station, Fairbanks 474-7188)
- **Seward:** Seward Marine Center, 224-5261 (Institute of Marine Science, Fairbanks, 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)



Wind Chill Chart



**COMMENTS AND ADVICE FROM UNIVERSITY GRADUATE STUDENTS,
STAFF, AND FACULTY**

FIRST THINGS FIRST

- Always leave extra time to get places, be picked up, etc. Alaska logistics are often difficult to plan precisely due to weather and airplane charter problems.
- Experimental/study design is essential; know how and what you will be analyzing before you go in the field. Don't do field work and then the fact. That is a waste of time and effort. Allow the first field period (or partial) for preliminary work. The most common result of trying to get important things done in a short period is coming back to town, looking at the data, and wishing you'd done it a different way or included additional analyses. The best scientific sampling designs often get foiled due to field conditions.
- Test run all equipment prior to leaving for the field.
- Before you leave, take care of personal affairs that will come up while in the field.
- Prioritize your list of what you want to accomplish during field work.
- Plan out what your project is before you jump in. I've seen too many people come up for an initial summer of fieldwork and go out and randomly collect miscellaneous data before taking classes or planning a project with an advisor. They end up confused, not using the appropriate statistical techniques, and searching through a bundle of information to define appropriate thesis material.
- I'd strongly recommend people have at least a term to plan their field projects with their advisor as well as other grad students and other experts before they jump in.
- Before you plan to spend time in a village, contact the village or district dignitaries; village elders, district superintendent, school principal, or school board for information on housing and meals and perhaps permission to stay at the village school.

- Talk to the department/institute travel officer.
- Talk with people in the local area of your work.
- Talk with those who have been in the area previously, especially recently.
- Talk to other graduate students /professors who have worked out in the field before, especially if they have been to your study site.
- Ask senior graduate students for advice; they often have been the ones who have done previous leg work to set up projects that you will be continuing. Talk to many people (preferably other grad students) who have done similar projects before, and who are familiar with the area.

WHO'S BUYING?

- Prepare for your field trip in advance. Many times people don't realize how long it can take to purchase scientific equipment, nor do they realize how expensive travel can be. Preparation and careful research well in advance can save quite a lot of money.
- Baggage is expensive and oftentimes you have to pay each carrier for it.
- Make sure both your own and your project's funding are provided, or that you are prepared to seek ways to fund them.
- A good tent is critical; a cheap one will cause many problems.

IF ONLY...

- If possible, bring more supplies than you think you need.
- It's nice if there is a way to get additional supplies in the field if necessary. Something critical is always forgotten regardless of the amount of planning.
- Take lots of pencils; they always write even when paper is wet, and ball point pens don't.
- Have reliable communications to someone in town or a village.
- A sideband radio (portable) will allow you to contact Fairbanks and many other locations if you know how to use it properly.

- Be sure to have sunscreen and sunglasses with you in the spring when the days are getting longer and the sun is higher in the sky.
- Be prepared to take advantage of long days; the season may be shorter than anticipated.
- Take reference manuals for all equipment to be used in the field. Also take instructions for all sampling and testing techniques with you.
- Back up methods for every procedure or alternative tests, even if they're sort of hokey. Take extra sample bottles and containers in case you lose one, break one, or decide to take more or different types of samples.

BAD THINGS CAN HAPPEN TO GOOD PEOPLE

- Do't go for an airplane flight just because someone offers.
- Do not store any field data in a tent! I lived/worked out of a wood stove-heated wall tent which burned to the ground while we were away. I nearly lost weeks of priceless data sheets.
- The main source of danger for the field worker is the helicopter. Safety training for anti-gravity machines must be taught every spring for every field person, bar none!!
- Learn first aid techniques and map and compass navigation if you'll be out in the field.
- Don't touch plastic or varnish with a lot of insect repellent on your hands - they'll stick.
- Do not let yourself be dropped off by a pilot without at least your sleeping bag, if not your whole survival kit. The weather may turn bad before the rest of the gear can be flown in.
- Use wet baby wipes to wash hands after using formaldehyde or other toxic materials, especially before meals.
- Double bag all samples and tape bottle lids with strapping tape to prevent leakage, especially in helicopters and airplanes. Know regulations for carrying fuels, chemicals, etc. in aircraft.
- People should work together, not solo.

HONOR YOUR MOTHER

- Disturb the study site as little as possible; plan your sampling scheme well in advance and sample efficiently.
- Know how to properly dispose of or contain foreign materials (chemicals), if needed for on-site sample processing. Do not dispose of chemicals in the field.

REALITY CHECK

- YOU must be self reliant and self-sustaining while in the field.
- Choose field partners/crew with compatibility (as well as skill/experience) in mind; isolation with a creep is awful.
- Remember that Alaska is a small community of people, confidentiality issues are of particular importance.
- Polypropylene material for underwear, but it tends to hold odors longer than wool.

If you have comments or advice to add to this list for future printings or revisions, please send them to:

UA Remote Travel Planning & Resource Guide
System Office of Risk Services
PO Box 755240
Fairbanks, AK 99775.

VIII. REFERENCES

References are listed here by subject matter. Where known, the distribution address and cost are included. Prices, revision, and availability are subject to change.

A. PLANNING

- 1] Morton, Keith. 2001. Planning a Wilderness Trip in Canada and Alaska. Rocky Mountain Books. #108, 17665-66A Avenue Surrey, BC, V3S 2A7. \$19.95
- 2] University of Alaska. 1986. Risk and Loss Control Manual. University of Alaska, Risk Management. Fairbanks, AK 99775. 30 pp.

B. TRAVEL

- 3] Alaska Section of Community Health and Emergency Medical Services and the Alaska Highway Safety Office. 2002. Emergency Medical Services for Alaska Travelers. Southern Region EMS Council, Inc., 6130 Tuttle Place, Anchorage, AK 99507-2041. 907-562-6449.
- 4] Brown, Robert E., ed. 1984. Boater's Safety Handbook. American Outdoor Safety League, distributed by The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 45 pp. \$3.50.
- 5] Frazier, David. 1998. The ABC's of Safe Flying, 4th ed. McGraw-Hill. 231 pp, 34.95
- 6] Gerding, Mildred. 1980. Helicopter Safety and Survival Procedures. Univ. of Texas at Austin. 40 pp. \$15.00.
- 7] Lanza, Mike. 2003. Day Hiker's Handbook: Get Started with the Experts. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 173 pp. \$16.95.
- 8] Prater, Gene. 2002. Snowshoeing, From Novice to Master, 5th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119, 176 pp. \$16.95

C. CLOTHING, SHELTER, FOOD, AND WATER

- 9] Gulbrandson, Ruth R. 1985. Selection of Outerwear Garments. Distributed by Cooperative Extension Service, University of Alaska, Fairbanks, AK 99775. 8 pp. \$1.00.
- 10] Heller, Christine. 1993. Wild Edible and Poisonous Plants of Alaska, Revised ed. Diane Publishing Co, PO Box 1428 Collingdale, PA, 19023. \$20.00.
- 11] USDA Forest Service, Alaska Region. Is the Water Safe? June 15, 2001. http://www.fs.fed.us/r10/tongass/forest_facts/safety/giardia.htm
- 12] Viereck, Eleanor G. 1998. Alaska's Wilderness Medicines: Healthful Plants of the Far North. Alaska Northwest Publishing Company, 130 Second Ave. South, Edmonds, WA 98020. 107 pp. \$10.95.

D. HEALTH, SAFETY, AND FIRST AID

- 13] Ajango, Deborah. 2000. Lessons Learned: A Guide to Accident Prevention and Crisis Response. University of Alaska Anchorage; (September 21, 2000). 220pp. \$15.00
- 14] Carline, Jan and Steven MacDonald. 1996. Mountaineering First Aid, 4th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 101 pp. \$10.95.
- 15] Sharkey, Brian J. 1979. Heat Stress. U.S. Department of Agriculture, US Forest Service, Missoula, MT 59801. 14 pp. free
- 16] Van Tilberg, Christopher. 2001. First Aid: A Pocket Guide: Quick Information for Mountaineering and Backcountry Use, 4th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119, 44 pp, \$3.50

- 17] Wilkerson, James A., ed. 2001. Medicine for Mountaineering, 5th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 368 pp. \$19.95.
- 18] Wilkerson, James A., ed. 1986. Hypothermia, Frostbite, and other Cold Injuries. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 105 pp. \$12.95.

E. SURVIVAL IN AN EMERGENCY

- 19] Alaska Department of Fish and Game. 1983. The Bears and You. ADFG. Box 3-2000, Juneau, AK 99802-2000. 8pp.
- 20] Alford, Monty. 1987. Wilderness Survival Guide, Alaska Northwest 130 Second Ave, South Edmonds. WA 98119. 103 pp. \$9.95.
- 21] Brown, Robert E. 1984. Emergency/Survival Handbook, 3rd ed. American Outdoor Safety League, distributed by The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 45 pp. \$3.50.
- 22] Brown, Robert E., ed. 1984. Boater's Safety Handbook, American Outdoor Safety League, distributed by The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 45 pp. \$3.50.
- 23] Davenport, Gregory. 2003. Surviving Cold Weather. Stackpole Books, 5067 Ritter Road Mechanicsburg, PA 17055. 232 pp. \$14.95.
- 24] Herrero, Stephen. 2003. Bear Attacks: Their Causes and Avoidance. McClelland & Stewart, Toronto, ON Canada M5G 2E9. 304 pp. 24.99
- 25] Wiseman, John, 1999. The Sas Survival Handbook: How to Survive in the Wild, in Any Climate, on Land or at Sea. Harpercollins Pub Ltd, NY. \$24.00

F. MOUNTAINEERING

- 26] Carline, Jan, Martha Lentz and Steven MacDonald. 1996. Mountaineering First Aid, 4th ed. The Mountaineers 306 Second Ave. West, Seattle, WA 98119. 101 pp. \$10.95.
- 27] Graydon, Don, Kurt Hanson ed. 1997. Mountaineering: The Freedom of the Hills, 6th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 560 pp. \$24.95.
- 28] LaChapelle, Edward R. 1985. The ABC of Avalanche Safety, 2nd ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 112 pp. \$6.95.
- 29] Tilton, Buck. 1992. The Basic Essentials of Avalanche Safety. ICS Books. 72 pp. \$5.99.
- 30] Wilkerson, James, ed. 2001. Medicine for Mountaineering & Other Wilderness Activities, 5th ed. The Mountaineers, 306 Second Ave. West, Seattle, WA 98119. 368 pp. \$19.95.

IX DISCLAIMER

In no event shall the University of Alaska be liable for any special, incidental, indirect or consequential damages of any kind, or any damages whatsoever, including, without limitation, those resulting from loss of use, data or profits, whether or not advised of the possibility of damage, and on any theory of liability, arising out of or in connection with the use or performance of this information.

This document could include technical or other inaccuracies or typographical errors. Changes are periodically added to the information herein; these changes will be incorporated in new editions of this document. The University of Alaska may make improvements and/or changes in the programs described in this document at any time. Please contact the Statewide Office of Risk Management or your local risk management office with suggestions or comments on this guide.

Except as expressly provided otherwise in an agreement between you and the University of Alaska, all information in this document is provided "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranty of fitness for a particular purpose. The University of Alaska assumes no responsibility for errors or omissions in this document or other documents referenced herein.