

TRAINING MANUAL FOR MICHIGAN 4-H

OUTDOOR ADVENTURE CHALLENGE



Section: WINTER CAMPING



WINTER CAMPING SECTION CONTENTS

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December 5, 2008

TO: 4-H Outdoor Adventure Challenge Leader Trainees, Instructors, and Leaders

FROM: Theresa and Joe Whitenight, Lead Instructors;
Jim Harper, State 4-H Outdoor Adventure Challenge Coordinator
and County Extension Director, Kalkaska County

RE: Winter Camping Weekend
January 16-18, 2009, Pigeon River State Forest

The winter camping training weekend will be here soon! **Everyone attending this trip needs to read the section on winter camping in your Training Manual notebook.** Please also visit the Winter Camping Supplement posted on the 4-H Outdoor Adventure Challenge web site at <http://web1.msue.msu.edu/cyf/youth/challenge.html>. The supplement consists of key sections of the Princeton Edu Outdoor Action web site, found in its entirety at <http://www.princeton.edu/~oa/index.shtml>. The information in the training manual and the web site supplement is provided to make the weekend comfortable and safe for you. The only "test" on the information is your use of it on the weekend. Get familiar with the tips and ideas -- and then use them. You'll be more comfortable in the field. Standing around in the snow gets people chilly and moving around helps us all stay warm, because of this formal instruction on this weekend will be brief and from time to time. We'll generally remind you of information from your notebook, add brief additional pointers, and have you get on with whatever task is at hand.

Please contact Theresa or Joe by January 3 at their home 586-725-3086 or Theresa's cell at 586-260-1474 to confirm that you are coming.

Be sure and bring **Leader Certification Record and Health Form card**
 Personal Data Sheet

For directions for any Outdoor Adventure Challenge training, we recommend you use Mapquest. You can Google Mapquest on your computer and get a detailed map of the area of the training and/or directions to and from the training. Mapquest web address is: <http://www.mapquest.com>. If you prefer a hand-written map and directions, request them from Jim Harper and he will be happy to send you a hard copy. He can be reached at the Kalkaska County MSU Extension Office, 231-258-3320 or by email at harper12@msu.edu.

Many of you have expressed concerns about the cold, etc. The cold is a factor to respect, absolutely. But we're sure you'll do fine. With the right understanding and equipment, the unique experience of winter camping can be a pleasure -- really. And even if a winter camping experience isn't a regular part of your later Outdoor Adventure Challenge activities, knowing how to overnight in cold weather adds to the safety for you and your club in many emergency situations. Instructors and other friends are there to help you get it "right." We want you to learn from the experience, but we certainly don't want the experience to harm you. Ask instructors and other trainees about anything that concerns you.

Remember Sam has extra gear. Call him if you need snowshoes or other things. It is first come, first served.

Pigeon River Forest Trip Plan

Third Weekend in January

Emergency Contact

Copy this information for your home folk.

Emergency contact person for this trip is Jane Crandall, Gaylord. Phone 989-732-6708. Anyone needing to reach us or relay a message to us should go through that person. Likewise, if we should need to relay information to your home people, that message would go through Jane.

Note: Emergency messages will **not** be brought to us in the field. The soonest you will receive such a message will be upon return to the vehicles on Sunday, or when we stop in Vanderbilt on Sunday and Sam phones in.

Weather Contingency Plans

Being winter in the northern highland, weather is a concern, mostly because roads can become impassable. We would reschedule the weekend only if all the snow melts (pretty unlikely), or if awful roads meant that no one could get here. If weather has been extreme, you can call Sam Thursday night, or Friday morning, for a status report on the trip. If you don't get Sam, you'll get the information on Sam's information machine.

Lunch Rendezvous for Early Arrivals

It has been traditional for those coming from afar to meet at the Wendy's restaurant in Gaylord (turn east off the freeway at the M-32 exit) about 1:00 p.m. or so to chow down and then drive up to Pickerel Lake together. This is optional, however. Maybe we'll see you there.

On Site

If you find something unusual on site, such as Pickerel Lake Road to the parking spot not being plowed, look for a message tied to an orange flag on the stop sign where Pickerel Lake Road intersects with Sturgeon Valley Road. Follow those directions.

Friday Night

The 5:00 p.m. arrival time is suggested so you have time to set up your tent in the light. Set up is an easy stroll. Please put two or more in a tent, and look up an instructor if you have trouble. The evening is then yours to limber up with skis or snowshoes, explore (in groups or 2-3, please), sit around a fire and visit, ask instructors questions, eat two or three dinners of "glue stew" to fuel up for the weekend, etc.

If you must arrive later than 5:00 p.m., please know that we will hit the trail about 9:00 a.m. Rise and shine, eat, pack, and be ready. Please keep in mind it might take you a little longer than usual to accomplish these tasks due to the cold.

If you are delayed until Saturday morning, be there by 9:00 a.m.! We do **not** encourage latecomers to try to come in alone to join us! If circumstances have kept you from us, better to give up for this time.

Sunday Lunch

On Sunday we will try to finish in time for a late lunch. We have traditionally headed to the restaurant in Vanderbilt and had lunch.

GEAR LIST FOR WINTER CAMPING

CLOTHING LAYERS:

ALL SHOULD BE WOOL, POLYPROPYLENE
OR OTHER SYNTHETIC – **NO COTTON!**

Base layer:

- Long underwear top & bottoms 2-3 pair
- Synthetic pants 2
- Underwear 3
- Wool socks with liners 4 pair

Insulating layer:

- Fleece or wool sweater

Outerwear:

- Parka/coat/shell with hood
- Wool or fleece hat
- Warm gloves 2 pair

Accessories:

- Toilet paper
- Medications
- Deodorant
- Sunglasses
- Mess kit (cup, plate & utensils)
- Wide mouth water bottles 2
- Bandana/ handkerchief/ scarf

Footwear:

- Snowmobile or Sorel-type boots with felt liners

Sleeping system:

- Sleeping bag - bring one if it is good to zero or sub-zero. If not, bring two and put one inside the other.
- Closed-cell sleeping pad (two is better than one)
- Overbag or sleeping bag cover

RAIN/SNOW GEAR:

- A rain coat & waterproof pants are suggested for digging your snow shelter. If you don't have a good raincoat or poncho, bring large heavy duty garbage bag that can fit over your winter coat in case it rains while we are hiking.
- Options – Snowshoes, X-country skis, poles, gaiters

FOOD – Lots of high energy sources:

- 2 breakfasts
- 2 lunches
- Snacks for 3 days

Individual Gear:

- Whistle
- Maps
- Notebook
- Personal first aid kit
- Nylon Cord 50 ft.
- Matches in waterproof container
- Lighter
- Flashlight & headlamp (extra batteries)
- Garbage bags 2
- Small pocket knife
- Compass
- Cook set (pots/pans)
- Tent
- Stove
- Fuel
- Backpack
- Lightweight snow shovel** (Available at TSC; the handle collapses to fit in a car trunk.)
- *Sled** - ideally a wide sled with tall sides. (Look at Meijers in the ice fishing section. Gander Mountain also carries them. If you use a sled with low sides the gear tends to fall off when going up and down hills or over bumps.)
- Camp seat** - a five gallon bucket with lid or folding camp seat.

*THESE ITEMS are great for sharing. You can arrange sharing with other participants if you like.

- Tents
- Stove
- Fuel
- Pots & Pans

*DO NOT WEAR
jeans/other cotton pants.

*DO NOT BRING
Electrical items; canned food or glass containers,
etc.

*PACK LIGHT, PACK TIDY - EACH PERSON
CARRIES HIS OR HER OWN EQUIPMENT*

TENTING IN SNOW – QUICK POINTS *by Sam Cornelius*

- First, a basic: A tent blocks wind and snow (important in reducing some heat loss) but provides little insulation. Two thin layers of nylon in a jacket wouldn't keep you very warm, right? Insulation in your clothing and your sleeping bag is what keeps you warm.
- Most 3-season tents will serve fine in winter. Best are those with a full fly, lots of breathable inner tent materials and windows for ventilation, solid construction to support weight, and a fairly steep slope to shed snow.
- Set up where you'll be protected from heavy winds and are crosswise to prevailing wind.
- Ground Option One: Stomp down snow for a solid base with snowshoes. This is quick and smooths out lumps, but you'll be sleeping over a cold slab.
- Ground Option Two: Dig down to the ground with snowshoes (carefully to not gouge up the snowshoe frame) or your shovel. The ground will be warmer than the snow, but you may end up on lumps or a slope. Pile up the excavated snow into a windbreak. Clear space at the tent entrance to come and go without cascading snow in the door.
- Some put their ground cloth inside the tent in winter. However, you get wetness on the outside of your tent as the snow melts from your body heat, which turns into ice in the tent fabric, so putting it outside is better.
- Use sticks instead of tent pegs. Put them crosswise in the snow, stomp the snow around them, wait a few minutes for the snow to set up, and they'll stay. You can use snow stakes – broad flat tent pegs with holes in them. The snow sets up through the holes and holds them.
- You can use a tarp overhead as a second fly or unwind as a windbreak.
- Ventilate. Open windows as much as you can. This allows moisture from bodies to escape. If sweat or breathed vapor is trapped in the tent it accumulates at the ceiling of your tent and you get rain or snowfall from your roof. If this happens, things will get damp. If the wind whistles through or snow blows in, string up a tarp on the outside to block it.
- Clean off snow from your clothing before entering the tent. Otherwise it'll get things damp. Take boots off with your feet outside. If you must bring snowy boots into the tent, put them into a garbage bag.
- No cooking in the tent. Steam dampens your gear. No stoves in a tent anyway - due to fire and suffocation danger. If your tent has a vestibule, you can cook there safely.
- Keep clothing and other items in bags to prevent their getting dusted with any snow that makes its way inside. Arrange clothing bags around the tent wall to keep you from leaning against the walls as you sleep.
- Luxury: A space blanket on the inside to reflect heat back up, wall-to-wall foam pads, or a carpet of woolen blankets! Wall-to-wall warm people are nice too; put the chilliest person in the center!

EQUIPMENT FOR THE WEEKEND

Tenting and Other Winter Sleeping Arrangements

For this trip, it is essential that tents and shelters be shared for two reasons – safety and weight. For safety sake, it is wise to have at least two of you per tent, and four is even better, to keep an eye on each other for any problems and to help each other keep warm and watch each other for signs of hypothermia. The weight of the tent and poles can be shared in your packs. Tents which are free-standing are easier to put up and keep spread out. You will learn techniques for staking a tent out in frozen soil and snow. A good tent is essential!

Tip: You must sleep with your vents open about 10 square inches per person to allow moisture to escape.

A tarp, ground cloth, or plastic sheet is necessary for winter camping as well as summer. It's best to put your ground cloth on the outside even in the winter. (Some do put it on the inside but then you get wetness on the outside of your tent as the snow melts from your body heat, which turns into ice in the tent fabric.) You *must* also have a closed cell pad or therm-o-rest mattress to reflect body heat back to you, and it must be full-length. Remember, you are shielding your body from the cold of snow. The fly and ground cloth can be used in making your shelter on the second night.

Sleeping Bags and Pads:

Your sleeping bag should be a synthetic or down material which will insulate to at least 5 to 10 degrees. You can improve your bag's ability to keep you warm by putting a blanket inside, or by using your coat and sweaters as a cover and beneath your bag. The pad will make a tremendous difference in your ability to stay warm. Don't try it without a closed cell insulated pad. Your bag should have a hood and drawstring to draw it up around your head.

Tip: Don't sleep with your mouth and nose drawn into the bag. The moisture in your breath will add a tremendous amount of moisture to the inside of your bag. Moisture means ice which will make you feel very cold, especially at night.

Stoves/Fuel:

Your propane or white gas stove will work just fine. You should be aware, however, that stoves with built-in generator may need a starter such as "fire ribbon" to heat the generator in weather under freezing. The Coleman Peak One is a good example of a stove which needs a fire ribbon. The Whisperlites and gas stoves do not. You should plan to carry extra fuel because you will need to melt snow for water.

Cooking/Water Storage:

Your regular cooking equipment will do fine, but you should bring a 3 lb coffee can (empty) with a wire bail to use to melt snow for water. You can make that yourself. Bring ample food for the weekend. One tip you want to keep in mind is that after the first night, everything in your pack will be frozen, including any food with liquid in it!

Clothing:

The tip for the day is "avoid cotton." The problem with cotton is that it wicks moisture and will retain it for a long time. If you wear some of the synthetics or wool from the skin out, you will be much more comfortable. Start with a layer of poly or duofold underwear. The duofold should be layers of synthetic and wool. The old "thermal" underwear would do if that is all you have, but take an extra pair and plan on changing back and forth regularly. Remember, that entails getting enough clothes off to get to the underwear.

Avoid cotton in pants and shirts (remember, that means no jeans). An extra pair for extreme weather will be good. A heavy wool shirt and a sweater can be put on and off as you work. A ski jacket or something

similar is good to carry, too. Some people wear ski bibs, but make sure they will breathe. Carry a rain suit for when you are working in the snow, such as putting up a tent or making a shelter. They make a good wind suit, too, but sometimes will collect moisture on the inside.

You should dress in layers in order to be able to easily add or subtract layers as the conditions change. A combination of layers of clothing which will allow you to operate at a level just under open perspiration is best. You will find that you need to move more deliberately and rest a little more often. After you perspire heavily, your body will cool as you dry out. Your clothing will be wet and the moisture will freeze.

Headwear:

A wool or synthetic stocking cap works great; a little itchy sometimes, but warm. You should plan on wearing it to bed. A light ski mask with a stocking cap on top works great.

Footwear:

You should plan to wear some kind of insulated boot which has removable felt or wool linings. At night, the liners should be removed and put under your head for a pillow. If you can stand the smell, the linings will dry overnight and be warm and ready to go. Avoid cotton socks. Use thin wool or wool blends. They will keep your feet warmer even though some moisture may accumulate. A poly-propylene liner sock could wick the moisture out to the outer sock and boot liner. Plan on wearing a couple of pairs of socks at a time, with a couple of pairs to change into, especially at night. Gaiters can really do a great job of helping keep socks and pant legs dry. They're not too expensive, or you can make them out of nylon packcloth and velcro if you are handy with a needle and thread.

Cross County Skis and Snowshoes:

Each of you will have to find your own pair of cross country skis with boots and poles. If you can find a pair of snowshoes, please do so. Don't buy either one if you don't have them. Rent the skis and we will try to scrounge up enough snowshoes to let you have the experience of packing with them. Let us know if you are having difficulty and if you need snowshoes.

Gloves:

Make sure you have warm gloves. Again, layers and extras are nice. You might consider heavy outer gloves or mittens which could be water resistant, with a wool or poly liner. Mittens are probably the warmest, but need a liner to protect your hands when you take the mittens off for work.

DON'T FORGET TO TAKE ALONG...

Gaiters – Lightweight gaiters are important in snow, since they prevent the entry of snow into your boots through the tops, saving you from the misery and danger of wet feet in winter.

Pack – A pack is useful even if you don't plan an overnight stay. You'll need someplace to stow the layers of clothing you peel off as the day warms up or as your pace quickens. Even on a warm day's hike, you should take along a small pack to hold your *just-in-case* extra clothing and the miscellaneous food and fear you'd have trouble toting without a pack.

Skin Protection – Especially in cold weather, the exposed areas of your skin can take a beating from the wind and cold. Lip balm and petroleum jelly protect your skin from painful chapping and windburn.

Eye Protection – Sunglasses are a must for sunny days when snow covers the ground. Protect your eyes from snow blindness with a pair of sunglasses.

Food – Eating properly is one of the best ways to prevent hypothermia. A good breakfast is mandatory. Snacks of high-energy foods throughout the day will help you maintain your body heat production as well as good lunch. Remember, food is your fuel.

Water – To prevent dehydration, you'll need to drink at least two quarts of water during a mildly active day, and more during more strenuous activity.

Be Prepared – Thanks to modern technology, you can be prepared for most outdoor occurrences without burdening yourself too heavily. So as long as you're wearing that daypack, throw in a space blanket, a foam sleeping and sitting pad, a small light, matches, compass and/or whatever else you might need or want within the next six hours. If you're packed for an overnigher, you presumably already have the equipment you'll need. Read the other information in the Winter Camping section of your training manual to familiarize yourself with the concepts of homeostasis, hypothermia, and layered clothing systems, and outfit yourself accordingly. Remember, your comfort and safety depend greatly on your clothing.

Care and Cleaning – Treat your Woolrich clothing like the fine outdoor equipment it really is. Always follow the instructions on the label when cleaning or laundering. Remember that wool and down are most safely cleaned by a reliable dry cleaner using the standard process. Consult your cleaner before having fiber-fill garments dry cleaned since harsh cleaning solvents can affect loft. Air out insulated clothing after every use and store flat or loosely rolled. Do not store compressed in stuff sack for extended periods of time.

BUILDING A WINTER FIRE

Step I - Determine Type of Fire Needed:

Cooking Fire - a fast burning small fire made of branches that are easily broken by hand.

Overnight and/or Warming Fire - a slower burning fire made with larger logs. Usually a small camp saw or axe is needed for this type.

Step II - Location of Firebed:

The fire should be located in a sheltered area but not built directly under overhanging limbs. A good windbreak can be built from logs piled on the windward side or a snow wall (if snow is available). The wall should be about 3 feet away from the fire.

Clear a three foot diameter circle of snow and debris. If the snow is too deep, pack the snow down in the area and make a platform of green logs slightly larger than the fire that is to be built.

Step III - Materials for the Fire:

Since dry wood usually can not be found on the ground during the winter, look for the *dead* lower branches on trees. (The lack of leaf buds on a branch is a good way to determine that a branch is dead.) It is usually a good idea to start gathering wood about an hour before actually starting to build a fire.

A lot of tinder is needed to start a fire in winter. Good sources of tinder are:

1. Birch bark – gather only from dead branches. Taking bark from live trees can kill them.
2. Dry, brown pine needles – gather these from the lower branches of the trees. Make sure they aren't snow-covered.
3. Dead leaves from trees – Oak trees tend to keep their dead leaves until spring. These dead leaves make good tinder if not snow-covered.
4. Small dead twigs from trees – these should be pencil size or smaller. Pine knots from old stumps – these knots contain a lot of pitch that burns in a hot, fast flame.

Step IV - Building the Fire:

The “tee-pee” method of fire building works best for novice fire builders. Always carry a candle stub and matches in a waterproof case for lighting. (A disposable lighter may also come in handy.) Place a small pile of tinder (except sticks) on the dry ground, then place the small sticks “teepee” style over the existing tinder. Make sure that air can get to the tinder. Light the candle stub (or a piece of birch bark), then light the fire with the candle from the wind side. The wind will help light the rest of the tinder.

As soon as the small twigs start burning, gradually add some slightly larger twigs. Keep slowly feeding the fire with progressively larger twigs until the fire is the desired size. A good bed of coals for cooking should be ready in about one-half hour. Pots may be hung from a green stick tripod over the fire.

Prepared by:

Audra M. Packer, Former 4-H Natural Resource Educational Assistant, Monroe County

Sources: “Outdoor Winter Activities” by G.A. Peterson and H.D. Edgren
“Snow Camper’s Guide” by Raymond Bridge

TIPS FOR WINTER CAMPERS

Personal/Conditioning Tips

Work up your endurance. In less than two months, you can make a great difference in your general conditioning. You'll be less tired and sweaty, and much warmer and happier for it. Stretching will increase flexibility and help prevent injury.

Get used to the cold. Spend as much time outdoors as you can. Also, start to sleep in a cooler bedroom. (Open the windows!) Turn down the heat. Your body will adjust, which can make a big difference in your comfort on the trip.

Reduce your intake of nicotine, caffeine and other stimulants. These constrict the blood vessels and make for colder hands and feet. Freeing your system of these (or cutting down) will improve your circulation. Do it well before the trip so if your mood gets awful from the change, you'll be friendly again by the time of your trip!

Put your glasses in a hard case in your sleeping bag with you. In the morning, you can put them on and see without having them fog up.

Carry your canteen next to your back in the backpack. Your body warmth will help avoid freezing the water. To avoid chilling your insides with ice cold liquids when away from camp, carry a plastic baby cup with a straw spout on the top in your shirt or inside jacket pocket next to your warm body. As you drink out of it, replace the liquid with snow, which will melt and warm up as you go along. Good drinks are tang, lemonade, tea or fruit drinks with sugar.

Wear a hat. Nearly half your blood is pumped to your head with every heartbeat. This same blood is circulated to the rest of your body. If it is cooled by a hatless head, it will help chill you all over. The old woodman's saying, "If your feet are cold, put on your hat" is true.

Pull the felt liners out of your boots and sleep in them. They will keep your feet warm during the night, and when replaced in the morning, will give you warm feet to start the day.

Always change into dry clothes before bed and you'll sleep warm. Your clothes get naturally slightly damp during the day from your body skin moisture.

Eat a high energy snack like candy, cookies or hot chocolate before bed to generate body warmth during the night. Hard candy or a candy bar tucked in your bag can be a good emergency food in the middle of the night to increase body warmth if you wake up chilled.

Don't breath with your head inside your sleeping bag at night. It will produce frost and moisture which will make your bag damp.

Carry a pair of clean socks (preferably wool) inside your jacket or shirt all day. They'll be there; warmed by your body, to put on in case your feet get cold. If you don't use them during the day, they'll be there, warm and dry, to put on before bed.

At night, put your boots under your sleeping bag foot, or even in the bag. Trying to put on stiff or frozen boots in the morning is an experience you want to miss. Also, of course, sleep with your canteens to prevent freezing. If your stove is the canister type, keep that near your warm body at night to maintain pressure.

Helpful Outdoor Tips

Use nylon parachute cord to lace your boots rather than cotton or buckskin. The nylon does not absorb water so is less likely to freeze up. Ice can be just knocked off it. Also, if you will tie them in square knot, the knot can be broken by yanking against it, and easily untied even if frozen.

Carry a plastic trash bag in a pocket. If you need to sit on the snow to rest, retie laces, or whatever, use it to avoid direct contact with the snow. Keep dry at all times! Do not sit, kneel, or play in the snow. Use waterproof mitts to build shelters, etc. Wear rain pants or kneel on a plastic bag to dig in the snow. If you fall, brush off immediately and completely. And, of course, remove layers of clothing so that you don't sweat if you get warm.

Tent Tips

Face your tent east to southeast. The prevailing winds will not come in your door, and the morning sun will be there to warm you as you get up to fix breakfast. Be careful not to get under a tree branch heavy with snow. Wind or the heat from a campfire could deposit this load of snow neatly onto your tent.

Unless there is a blowing blizzard, keep tent doors and windows open for ventilation. If you don't the moisture from your breath and body will freeze on tent walls and snow on you every time you move, another miserable experience.

A rain fly over your tent will provide extra insulation. Be sure that it has at least three inch airspace between fly and tent wall to provide for escape of moisture as well as provide good insulation airspace.

If your tent needs stakes, bury them in snow, or better yet, wrap the guy raps around small logs or rocks and bury them in the snow. Within a few hours, the packed snow around them will freeze enough to resist the most persistent wind.

Dig down as far as possible into the snow before putting up your tent. No matter how cold the snow or air is, the ground will not be colder than 18 degrees. Smooth and pack the snow so that you don't end up trying to accommodate your body shape to a bed of frozen lumps. Your body usually loses. Pile snow around the tent for stability and extras insulation.

Avoid camping in valleys. Cold air settles at night.

Reminders

Everything takes longer and is a bit more fumbly in cold weather. Practice with your tent, bindings, stove, flashlight, etc.

What about bringing chemical, fuel or electric hand warmers on a cold-weather trip? If you depend on these for a basic level of comfort, you'll be in major discomfort if they run out or fail. It's best to use them only occasionally, either in a pinch or when you want extra luxurious toe-warmth.

Gift Ideas!

Have you put some helpful winter gear on your gift lists for the holidays? It's a great time for good friends and family to bless you with new wool socks, long johns, glove liners, gaiters, and so on. After all, they want you to come back to tell them crazy cold-weather stories, right?

If you know anyone who has winter camped and have not picked their brain yet, do so. If they have ideas that run counter to what we are recommending in the 4-H Outdoor Adventure Challenge program, ask about it and we'll try to tell why we're right.