

July 2014

Ice Age National Scenic Trail



Volunteer Safety Handbook



Emergency Contacts

Each chapter should fill in Emergency and Non-Emergency contact numbers for their local area, to notify authorities of planned work dates, locations, and other info prior to work projects.

If emergencies arise = Dial 9-1-1

- Ambulance/EMS =
- Fire =
- Police/County Sheriff =
- Hospital/Clinic Telephone & Address =
- Land Managers by Segment Name =

- IATA Chapter Leader(s) =

- IATA Staff (Cross Plains Office) = 608-798-4453
- IATA Director of Trail Operations = 608-592-1415
- IATA Field Representative (as appropriate) =

- Dan Watson, Volunteer Coordinator, Cell: 715-441-7717,
email: daniel_watson@nps.gov

Section 1. General Safety

Basic Safety Rules and Proper Attitude

- Work in advance with IATA staff and local land managers to discuss, obtain approvals for, and notify them of your plans on the trail. Ensure emergency responders know how to find you in the event of an emergency. When seconds count, time spent directing emergency responders to your remote location is time you don't have.
- Ensure that all volunteers have the appropriate PPE (Personal Protective Equipment), know how to use it, and actually do use it. Consult the Job Hazard Analysis (JHA's) and appropriate IATA and partner policies (i.e.: power equipment operator, pesticide applicator, etc.) for recommended vs. required PPE.
- *PLAN* your WORK & *WORK* your PLAN.
- Avoid working on the trail alone if at all possible. If you must go alone, tell someone your location, what you plan to do including equipment you're using, and your expected time of return. Some tasks require a companion worker, such as chainsaw operations.
- Check the weather forecast. Dress appropriately and in layers. Have plenty of water, energy snacks, a first aid kit, and cell phone on hand.
- Everyone is responsible for their own safety, as well as the safety of others. Speak up if you have questions, concerns, or see something that is unsafe. Stop the work, resolve the problem, and either continue safely or put the work on hold until issues are resolved.
- Don't exceed your personal physical or skill limitations. Work at your own pace.
- *There is no single inch of the trail that merits even one drop of blood from anyone.*

Safety Training for Volunteers

Operational Leadership Concepts

NPS Operational Leadership introduces a new tool within our National Park Service Occupational Safety and Health Program—a tool designed to prevent or mitigate risk associated with human errors when we are faced with threats.

Very often it rarely matters what we tell (policies, procedures, rules, regulations, safety program guidelines, etc.) an adult to do, it only matters what that person perceives the situation to be at that final moment when they make a decision, and their personal assessment of risk, the probability of success, and the consequences of failure.

NPS Operational Leadership is not a replacement for a safety program. It is a *special human factors tool* that is part of the National Park Service Safety Management System. NPS Operational Leadership is about each individual becoming a leader within his or her own job description, taking responsibility for their own safety and the safety of the employees and volunteers they supervise.

Why is it called NPS Operational Leadership?

The term “Operation” refers to every job we do in each of our diverse workplaces. Whether you are crafting side hill tread on a steep cross slope, building an informational kiosk at home in your workshop, conducting a trail assessment in the field, pulling garlic mustard, or attending Hike the Hill in Washington, D.C.—the work of creating, supporting, protecting, building, promoting, and stewarding the Ice Age National Scenic Trail entails countless operational jobs to perform.

The term “Leadership” refers to effectively managing ourselves and motivating and guiding the activities of other team members. Essential to this is stimulating others to work and communicate as a team, and providing feedback to team members regarding their performance.

Therefore Operational Leadership pertains to every National Park Service job skill and empowers employees and volunteers to be assertive about their safety and the safety of their team. NPS Operational Leadership encourages everyone to participate in the decision making and risk management process.

Future Training Opportunities

NPS Operational Leadership training is a 16-hour program for employees and volunteers of the National Park Service, facilitated by employees who have completed the Operational Leadership Train-the-Trainer Class. It involves a significant time commitment for participants—one which is logistically difficult for Ice Age Trail volunteers, given the length of the trail and the dispersed nature of the volunteer workforce.

Formal training in NPS Operational Leadership was initially provided to NPS staff, IATA staff, and volunteer leaders who were able to attend the training on November 13-14, 2013. This core group will look for opportunities to implement the concepts of Operational Leadership in their home areas, and share the information with neighboring volunteer chapters as possible.

IATA Chapters may request formal NPS Operational Leadership training through the National Park Service where and whenever volunteer interest exists for such a time commitment.

NPS-Ice Age NST will continue efforts to develop training formats more user-friendly for all Ice Age Trail volunteers. Your commitment in this effort, whether as a trail volunteer, an IATA crew leader, local segment monitor, or chapter leader is essential in establishing the *Culture of Safety* that will make the Ice Age NST a leader in this critical initiative.

In the Mean Time...

Volunteers and staff familiar with NPS Operational Leadership should share their knowledge with others whenever possible. Trail-wide implementation of these concepts and practices will rely heavily on learning from others in real-life settings, rather than formal classroom training.

- Utilize Operational Leadership in advance of planned work activities where there is opportunity to fully assess Risk and Mitigation needs using the GAR (Green-Amber-Red) model. Document and retain your planning efforts.
- Apply Operational Leadership concepts throughout the day on all work events, regardless of project size. Use SPE (Severity-Probability-Exposure) and GAR (Green-Amber-Red) pocket cards to assess unanticipated situations.
- Ensure that all volunteers are aware of and have access to this Safety Handbook.
- Promote the use of safety briefings (“tailgate” safety sessions) at all opportunities.

Safety Briefings

- Conduct a short tailgate safety briefing at the start of each work day, and periodically throughout the day as necessitated by changing circumstances.

- No job is too small or easy, nor any staff or volunteer too skilled, to “skip” the briefing.
- Briefings should be conducted in two orchestrated parts-- by the Team Leader who provides the overview of the project, and by the Crew Leader who then briefs the smaller assigned group.
- Briefing topics should include such things as: introductions if not everyone knows one another; verification of training certification (such as use of chainsaws); weather outlook; review of the task(s) at hand; discussion of any known risks and how they will be handled (mitigated or avoided); brief review of any appropriate JHA; PPE check; Questions & Answers.
- Ensure everyone knows where First Aid Kits, Defibrillators, the Project Safety Net, emergency care locations, and NPS Injury Reporting Kits are located.
- Remember.... Briefings are meant to be brief, while still covering the essential information to provide for a safe and enjoyable work event.

SAMPLE SAFETY BRIEFING

Good Morning! My name is Mary Smith and I’ll be leading the work project today out on the trail. I see we have a new person to welcome with us today, so let’s all introduce ourselves and where we’re from (introductions). Okay. Well, it looks like we’ll have pretty good weather today, but the temperature and humidity is expected to rise in the afternoon, so be sure you have two quarts of water with you and take frequent breaks in the shade. Let’s also watch out for each other as far as heat illnesses. Right now let’s review the Tailgate Safety Card entitled “Heat Disorders” just so we’re all familiar with the signs of heat stress (review card). Okay. Well, our job today is to walk about two miles up the trail and then back here to the parking lot, brushing and pruning the trail as we go. Mike and I will be in the lead with our bow saw, Jane and Frank can take the right side of the path with their pruners, and Sally and Joe can do the same on the left side. Let’s all stay within sight of the others. Just so everyone knows, there is a hornet nest up the trail about half a mile from here. I have it flagged, so we’ll know when we’re getting close. Does anyone have any severe allergy to bees or wasps? Oh, you do Mike? Do you have an epi-pen with you, and can we assist you if needed (discussion)? OK, that sounds good. I see we all have our gloves, and Mike and I have our hard hats in case we need to saw any overhead limbs. I have the First Aid Kit in my daypack, and the Injury Reporting Kit, too. Do we have any nurses, EMT’s or medical professionals in the group today? Now before we get started, let’s quickly review the JHA for safe carrying and use of our tools (review JHA). That’s about it. Does everyone have their cell phone with them? Does anyone have any question or anything else to add?

How Long Did That Take????

On-Line Resources

- **NPS and IATA Websites for Volunteer Resources**

Electronic versions of the items listed below can be found through the IATA website at <http://www.iceagetrail.org/become-a-volunteer> (then link to the NPS Volunteers-in-Parks webpage, or the NPS Ice Age National Scenic Trail's website: www.nps.gov/iatr)

From the Home Page, click on Volunteer Resources>> to access the following safety tools:

- **Volunteer Agreement Form**

The OF-301a Volunteer Agreement Form is required of each volunteer in order to receive Injury and Tort protections through the National Park Service and US Department of Labor. Volunteers in good (current) standing through their membership in any IATA chapter or Trail-wide group are already covered under existing group agreements with the NPS.

Non-IATA member volunteers (i.e.: first time volunteers you have recruited for specific trail work, school or scout groups, etc.) must complete an OF-301a Volunteer Agreement before performing any volunteer service on behalf of the Ice Age National Scenic Trail, in order to have Injury or Tort protections extended to them.

Consult Volunteer Coordinator Dan Watson for more information on how to use these forms.

Email: daniel_watson@nps.gov Office: 651-293-8452 Cell: 715-441-7717

- **Job Descriptions**

Each volunteer is required to have a "Job Description" as part of the OF-301a Volunteer Agreement under which they are covered. Standardized Job Descriptions exist for work categories including Trail Construction, Trail Maintenance, Vegetation Management, and Support Services. The job description denotes the "scope of duties" a volunteer may be asked to perform, and specific jobs are numerically referenced to a corresponding Job Hazard Analysis (JHA) for safety purposes. Additionally, the IATA Trail Notebook series includes pictures and excellent "how to" narrative descriptions of work tasks.

- **Job Hazard Analysis (JHA)**

JHA's are written in standard template format used throughout the safety community. Very simply, they serve three purposes: 1) identify each task or step within an activity, 2) denote the hazard(s) that could be encountered within each step of the activity, and 3) provide recommended procedures to avoid the hazard(s).

JHA's are very useful in conducting safety briefings, as they cover the material in a very concise, yet thorough, manner. Volunteer work leaders should refer to the pertinent JHA's of the day while conducting safety briefings.

As stated above, JHA's are numerically referenced to specific tasks within the Job Descriptions. This provides all volunteers with a quick and easy reference in finding a specific JHA for any job. For example... the job "Prune/Brush" is found within the Job Description "Trail Maintenance." It is referenced to JHA #2. Simply go to the JHA library, click on JHA #2, and it will provide the Job Hazard Analysis for working with "Long Handled Tools and Saws," which would be the tools used in pruning and brushing operations.

- **Tailgate Safety Series**

The Tailgate Safety Series is a supplement to the JHA library. They cover topics not found in JHA's, and are good references at both the morning safety briefing as well as throughout the work day as circumstances change or unexpected developments occur. For example, you and your fellow volunteers may be on a lunch break out on the trail when you notice developing thunder clouds. A quick review of the Tailgate Safety Topic "Thunderstorm Safety" would provide a plan of action.

The Tailgate Safety Series is available to all volunteers and may be printed from the NPS website and carried in a field notebook for ready reference. A limited amount of Tailgate Safety cards were printed, laminated, and connected with a custom trail carabiner (complete with a safety whistle), and distributed to chapters and MSC leaders in 2010. This allows for weather resistant safety info to be clipped to a day pack or belt loop for easy access and use. Additional card sets will be provided to volunteers as funding allows.

Daily Checklist

Volunteers should equip themselves with basic necessities for a successful day afield. Items to include will change with the season and weather, but the following is a suggested list of gear and supplies that will fit well into any day pack:

- | | |
|---------------------------------|----------------------------|
| ✓ First Aid Kit | ✓ Insect repellent |
| ✓ Energy Snacks | ✓ Water |
| ✓ Rain Gear | ✓ Leather Gloves |
| ✓ Notebook and Pencil | ✓ Eye/ear protection |
| ✓ Orange vest/ Other PPE | ✓ Compass & Trail Map |
| ✓ Space Blanket | ✓ Cell Phone |
| ✓ Sturdy Leather Work Boots | ✓ NPS Injury Reporting Kit |
| ✓ JHAs / Tailgate Safety Topics | ✓ Wide Brim Hat |

Tool & Equipment Use/ Inspection

1. Always work at a comfortable pace, rest when tired, and keep your mind on your work.
2. To provide each person with relief from the particular motion and effort required in using one tool, and to enable volunteers to learn new skills, swap tools occasionally and rotate tasks. Fatigue and wandering attention can result in an accident.
3. Inspect all tools before use for defects and missing parts, and at the end of the day. A tool that breaks in use can be extremely dangerous.
4. Keep cutting tools sharp. Dull blades can bounce or glance uncontrollably and make work tiresome, increasing the likelihood of accidents caused by fatigue.
5. Before beginning work, clear away brush or limbs that might catch a swinging tool unexpectedly, causing a wild uncontrolled swing.
6. While working with a tool, always stand in a balanced position. Adjust your stance and tool grip continually to prevent slipping footholds and glancing blows. If the woods are wet, be especially careful. Stop work during rain showers.
7. While working with a tool, anticipate the consequences of every move. Avoid cutting toward any part of your body or another worker.
8. When carrying, loading, or storing a cutting tool, cover the blade with a sheath to protect the edge from being dulled and you and fellow maintainers from accidental cuts.
9. When transporting tools in a vehicle, secure them to prevent bouncing, sliding, or shifting.
10. When passing a tool to another, always pass it handle first, release it only when the recipient has a firm grip.
11. When working in groups, maintain at least 10 feet between workers, so wild swings, flying chips, and tools slipping out of your hands do not injure others.
12. Carry tools at your side on the downhill side. Grasp the handle at about the balance point with the sharpened blade forward and down. Never carry tools over your shoulder or slung around your neck.
13. When leaving tools at a work site (flat areas), lay them against a stump or downed log with the blades directed away from passing workers. If on a slope, lay tools on the uphill side of the trail with heads uphill. Never sink double-bit axes, Pulaskis, mattocks, or similar double-edged tools into the ground or in stumps where they become dangerous obstacles.
14. Always follow manufacturer's guidelines for inspection and safety features on any power tool or mower.

First Aid

Ideally, all crew leaders should be certified by the American Red Cross in basic first aid and CPR. So that others can assist if needed, leaders should carry plasticized quick reference sheets or a small first aid booklet.

A first aid kit should be checked, complete and large enough for the crew and the job at hand. Above all, it should be taken along on the job, and crewmembers advised of its location. Professional assistance may be hours away. Individual trail workers should always carry a first aid kit on maintenance and trail construction work. Refer to Appendix 1 for special requirements of Logger's First Aid Kit when operating chainsaws.

Pest Prevention

INSECT, SNAKE, and ANIMAL SAFETY

Hikers and trail workers may encounter a variety of creatures which pose safety hazards ranging from minor inconveniences to potentially life-threatening situations. Common sense and a general awareness of your surroundings are your best defenses.

INSECTS

- Avoid sitting on rotten logs or stumps. Spiders and ants often use them for homes
- Wearing long-sleeved shirts, socks, and long pants will help guard against many stinging insects
- "Bee" aware that not all stinging insects nest in trees. Some bees and other stinging insects nest underground and will become disturbed by earth-moving activities
- Many stinging insects become more aggressive in the Fall
- Insect repellents containing DEET or Picaridin may help protect against biting or stinging insects
- If you know you are allergic to insect bites and stings, take the proper medication with you on the trail, and seek proper medical attention immediately if you are stung or bitten

SNAKES

- Wearing sturdy leather gloves and boots at least 10 inches high are good precautions when hiking or working in snake country
- Do not put your hands or feet into areas you cannot see, such as brush piles or rock crevices
- All snake bites, whether venomous or not, should receive immediate medical attention
- Rattlesnakes and Copperheads have "hemotoxin" venom, which attacks red blood cells and tissue of bite victims. Keep the victim as calm and quiet as possible, keep the wound site inactive and positioned below the level of the heart, and transport the victim to a hospital immediately

OTHER ANIMALS

- You may be sharing the trail with black bears. Make noise as you hike to give bears a chance to be forewarned of your approach and move away before a surprise confrontation occurs. If you encounter a bear, back away slowly. Do not turn your back to the bear or run, as this may trigger an aggressive response from the bear. Sows and cubs must be avoided at all times. Commercially available bear repellent (aerosol pepper spray) may be effective as a last resort
- Do not handle or approach wildlife. Young animals that appear to be abandoned should be left where they are. Resist the temptation to "rescue" young animals
- Some wildlife such as foxes, skunks, raccoons, and other mammals commonly contract diseases or illness such as rabies or mange, and may lose their natural fear of humans. Avoid any animal that is encountered, especially those which appear ill, agitated, or disoriented. Report such wildlife sightings to the appropriate local officials, such as Conservation or Wildlife Enforcement Officers

References: OSHA Quick Card- Rodents, Snakes and Insects,
http://www.osha.gov/Publications/rodents_snakes_insects.html
Safety Tips for Hiking the Trails of New Hampshire, <http://www.nhliving.com/hiking/tips.shtml>

LYME DISEASE PREVENTION

The best defense against Lyme disease is to invest time and effort to protect yourself from tick bites. While it may be impossible to avoid contact with ticks altogether, these guidelines will decrease your chances of being bitten by a tick.

- Ticks prefer areas with brush and tall grass—avoiding these habitats will reduce your exposure to tick concentrations
- The months of May, June, and July are the most active for ticks that transmit Lyme disease—take extra precautions then
- Stay to the center of the trail whenever possible, minimizing your contact with grass, brush, and leaf litter
- Use insect repellent with 20% - 30% DEET on exposed skin and clothing to prevent tick bites
- Wearing long pants, long sleeves, and long socks will help keep ticks off your skin
- Wear light colored clothing to spot ticks more easily
- Tuck in shirts, and tuck pants legs into socks or boot tops to help keep ticks on outside of clothing
- If you will be in tick-infested habitat for extended periods, you may consider taping shut the area where your pants and socks meet for added protection
- Perform periodic “tick checks,” and inspect yourself thoroughly at the end of your outing
- Remove imbedded ticks with fine-tipped tweezers—monitor yourself for symptoms of Lyme disease (bulls-eye rash, fatigue, fever, soreness, etc.)—consult your physician if you suspect the onset of Lyme disease

References:

Center for Disease Control—

http://www.cdc.gov/ncidod/dvbid/LYME/Prevention/ld_Prevention_Avoid.htm

Poison Ivy

Poison Ivy grows in different forms; sometimes it is a shrub, sometimes as a plant low to the ground, sometimes as a vine climbing upward (especially on trees). The adage, “Leaves of Three- Let it Be,” is true.

Some people are extremely allergic to this easily identified plant. If seen, others should be alerted to its location so they can avoid it. A line of Technu® products, available in most drug stores, can help prevent contracting the poison. It is recommended to wear gloves and long-sleeved shirts when working in areas of Poison Ivy.

For more information on Poison Ivy and other poisonous plants, go to the Centers for Disease Control and Prevention web site at www.cdc.gov/niosh/topics/plants.

Section 2. Specific Hand & Power Tool Safety

Local and individual preferences often dictate the kinds of tools, which are chosen for various tasks. Some of the most commonly used tools and their functional purpose are identified in this section. A few tips on using the tool safely and effectively are also included. Every trail volunteer needs to learn how to choose the correct tool for the job, use it effectively and safely, care for and store it properly. Purchasing high quality tools initially is more cost effective; long-term performance exceeds that of lower quality tools.

The right tool should be used for the job. Substitutes are dangerous and ineffective. Tools should be kept in good condition. A file should be carried for spot-sharpening edges throughout the workday. Tools should be carried with the appropriate guards in place. At the end of the workday, all tools should be cleaned, sharpened, lightly oiled and stored properly.

Remember the IATA Crew Leader “CUSS” model for tool use and safety (Carry, Use, Storage & Safety = CUSS).

A comprehensive listing of hand tools and recommended safety practices for each can be found in the *Ice Age National Scenic Trail – A Handbook for Trail Design, Construction, and Maintenance*.

HAND TOOLS

Lopper

Uses: Cutting selected limbs or saplings during construction and maintenance phases. Larger models can cut limbs approaching 1-1/2” in size. Do not twist side-to-side to try to get a deeper cut. FISKARS power-gear models are proven performers.

Tips: High Quality loppers with replaceable parts should be used. Saplings should be clipped flush to the ground and limbs flush to the tree. Loppers must not be thrown on the ground as this may clog the head and dull the blade. At the end of the day, the blade should be cleaned and wiped with light oil. Anvil loppers cut more roughly but bypass loppers may become worn and eventually fail to shear.

Safety: Leather gloves and a hardhat should be worn. Eye protection is also recommended.

Hand Pruner

Uses: Cutting small branches encroaching on the trail. Also useful for cutting protruding roots that are tripping hazards. Mostly used for trail maintenance.

Tips: Handier and lighter to carry than a lopper when only minor pruning is needed, it should be carried in hand while hiking to clip small branches as encountered.

Safety: Leather gloves should be worn. Eye protection is also recommended.

Pruning Saw

Uses: Cutting limbs encroaching on the trail, cutting small trees or shrubs at the base, and removing small to medium sized windfalls. Pruning saws come in a wide variety of sizes and tooth patterns, ranging from small folding models with 6" to 8" blades to those with blades of 26" in length. Most blades are curved and cut only on the back-stroke, a handy feature when removing hard to reach limbs. The STHIL PS-30 folding saw is a proven performer.

Tips: If the pruning saw can be re-sharpened, it should be re-sharpened often. A light coat of oil should be applied to the blade after each use. **Safety:** Except for folding models, pruning saws should be kept in a sheath when not in use. A hand holding a limb or sapling should not be crossed beneath the hand pulling the saw, as this can lead to a nasty cut when the saw comes through the limb sooner than expected. Personal Protective Equipment (PPE) includes leather gloves and hardhat.

Bow Saw

Uses: Cutting limbs, small trees and small to medium sized windfalls, essentially the same as pruning saws except that bow saws can cut larger material. Bow saws have blades ranging from about 21" to 36" in length. The smaller saws are generally triangular in shape and work well for pruning. Their shape limits the length and depth of the stroke to material less than 4" to 5" in diameter. The larger saws are bow shaped and can cut material up to 8" in diameter, but are more prone to twisting and binding in the cut.

Tips: Bow saws cannot be re-sharpened due to the hardness of the blade. When the blade becomes dull, or bent, it should be replaced. It should be wiped with light oil before storing. Small saws are more useful; use another tool for cutting large material.

Safety: Same as pruning saws. PPE includes gloves and hardhat.

Pole Pruner and Pole Saw

Uses: Cutting overhanging limbs that cannot be reached with bow saws, loppers and other short-reaching tools. Pruners and saws are often combined on the same handle to allow for more flexibility.

Tips: When cutting large limbs with the pole saw, it is best to use a two-step process. In the first step, a 4" to 6" stub is left by making an under-cut and then a cut from the top of the limb. This prevents stripping the bark from the trunk of the tree. In the second step, the stub is removed flush with the trunk.

Safety: Fingers should be kept out of the pruning head. The rope may snag unexpectedly and cause the blade to close causing a serious cut. When using the saw, eye protection will prevent sawdust from getting into the user's eyes. Required PPE includes eye protection, hardhat and leather gloves.

Grass Whip ("Weed Whip" or "Grass Cutter")

Uses: The weed whip is swung back and forth like a golf club and cuts grass, weeds, light brush, briars and small tree seedlings. It is a very effective tool for clearing new growth along the trail.

Tips: Weed whips come in two basic varieties, L-shaped and triangular-framed. The second variety is more stable, cuts larger material and is recommended. Sharpen the blade periodically (bevel side only), using a standard flat file. It is fairly easy to break the wooden handle, and for this reason, consider the Suwanee Sling.

Safety: Plenty of space should be left between the user and others. The handle should be held firmly in both hands and swung rhythmically back and forth. Strong swings should be made to prevent the blade from bouncing or glancing off springy growth. The tool should be carried or stored with a sheath in place. PPE includes leather gloves and leather boots.

Suwanee Sling

Uses: This is essentially a heavy-duty, hand-powered weed whip that also has an axe blade. It does the same work as the weed whip, but can also cut through larger material that may be occasionally encountered.

Tips: The tool's heavier weight allows it to more easily cut off larger material than a weed whip.

Safety: Same as a weed whip.

Axe

Uses: Axes can be single-bit or double-bit. For trail work, an axe is of limited use. For building, most people prefer the multi-purpose Pulaski or a combination of chopping Mattock,

good hand pruning saw, and bow saw. For routine maintenance, a good hand pruning saw and a bow saw are better choices. A single-bit axe is useful for placing wedges when chain sawing and for skinning limbs off trees. If you must cut through a lot of downed trees, consider using a double-bit axe.

Tips: The blade(s) should be kept sharp.

Safety: Determine and maintain adequate distance between workers. Stand with legs spread when swinging the axe; and take care not to swing the axe when tired, as a glancing blow is likely to occur. Wear gloves, long pants, and good boots. A hardhat is recommended.

Pick Mattock

Uses: A mattock is a heavy, strong and popular tool that moves dirt and rocks, cutting through roots and unearthing boulders. It is especially useful when building new trail (especially side hill trail), maintaining existing trail, installing steps and water bars and other heavy work. The mattock's 5-lb. weight allows it to move more material with less effort than if trying to use a lighter tool. The pick mattock is especially useful in hard or rocky soil where the pick is useful to break up the soil or pry out rocks.

Tips: As with other swinging tools, the user should blend force with accuracy. Use the pick mattock with a clock-like "pendulum" motion, across and not into, your body.

Safety: Choking up on the handle should be avoided, as a glancing blow may strike the user. However, holding the handle at the very end and swinging the mattock high overhead should also be avoided, as the stroke is more tiring and less accurate than when the handle is held in several inches from the tip. If breaking rock, goggles should be worn. PPE includes heavy leather boots and leather gloves. When working on a hillside, take extreme caution not to tumble rocks or debris down on those working below.

Pulaski

Uses: The Pulaski combines the blade of an axe with a narrow grubbing blade. It was developed for fighting forest fires, but is also very helpful in trail work. It is not as balanced or safe as the axe, or as efficient as the mattock for moving soil, but it serves two purposes and saves weight if tools need to be carried long distances. If considerable amounts of axe work or mattock work are needed, the Pulaski is a poor choice; however, it is a functional all-around tool.

Tips: The axe end is sharpened and maintained like an axe, and the mattock end is sharpened like a true mattock (sharpen bevel side only). The Pulaski's mattock blade can serve as a substitute adze if it is sharpened to a keen edge. If a Pulaski is going to be used as an adze on wood, it should not be used for any other purpose.

Safety: The Pulaski can be dangerous due to its two sharp blades. It should always be stored and carried in a sheath. The same safety practices as used for an axe should be followed. PPE includes hardhat, leather gloves and heavy leather boots. The crew leader should demonstrate how to hold and use the tool safely and effectively and inexperienced users should have shin guards and possibly steel-toe boots. When working on a hillside, take extreme caution not to tumble rocks or debris down on those working below.

Hazel Hoe

Uses: The Hazel Hoe is a heavy duty dirt chopping and grubbing hoe with a hefty axe-length handle. It looks like and is essentially a wide adze designed for working dirt rather than wood. It is a very effective tool for digging out new trail on hillsides. The tool's blade is also useful for smoothing new trail.

Tips: Workers who are not comfortable using an axe or Pulaski may be quite comfortable using a Hazel Hoe.

Safety: Maintain adequate space between workers and, if working on a hillside, pay attention to those working below so as not to send rocks or other debris tumbling down the hillside. Recommended PPE includes gloves and hardhat.

McLeod

Uses: The McLeod is a heavy-duty combination hoe and rake that is used for constructing and maintaining the trail. It has six digging (or rake) teeth opposite the hoe blade. It is useful for removing duff layers and loose ground debris to create a level trail and for finishing the grade and out-slope of benched trail. It can also be used to chop off light brush and roots. It must be supplemented with a mattock or other digging tool when there is considerable digging or heavy brush.

Tips: The hoe blade should be kept sharp.

Safety: Adequate space between workers should be determined before swinging this tool. Leather gloves are recommended.

Rouge Hoe

Uses: The Rouge Hoe has a 4-5 foot long handle and a 4"-5" wide hoe at the end. It is useful for loosening dirt and grubbing small diameter brush.

Safety: Same as a McLeod.

Shovel

Uses: Shovels are used for digging and moving soil and other granular material, cleaning water bars, culverts, outlets and diversion ditches. They are also used for leveling a base for sill rocks, steps, transferring loosened soil into buckets to disperse off-trail, etc. In trail work, long handled, round-pointed shovels and flat "transfer" shovels are used almost exclusively.

Tips: If you're digging in rooty soil, you may want to sharpen the shovel blade by filing along the top side of the blade to within two or three inches of the shovel back. A sharp blade cuts duff a lot easier, but has little value in rocky soil or for moving dirt. Avoid prying with the shovel, as either the blade will eventually bend or the handle break. Use a mattock, pick or rock bar instead.

Safety: The most common injuries when using a shovel are back injuries. Bending from the knees instead of the waist will help prevent injury. Leather gloves should be worn.

Posthole Digger

Uses: Digging holes for footings, posts, privies, etc.

Tips: There are two types of posthole diggers, the clam-type and auger-type. The clam-type is the more versatile of the two and can be used in a wide variety of soils. The auger-type works well only in sandier, drier soils. It will not work in rocky soils and it is hard to clear off excavated material if the soil is wet. Avoid cutting or chopping with this tool. It should be used for lifting the soil out of the hole. Use a digging bar or rock bar to break up hard materials or loosen rocks.

Safety: Soil should be lifted from the hole with leg muscles, not back muscles. If the wooden handles are too flexible or the collar becomes bent, fingers can get pinched when the handles are closed. Leather gloves are recommended.

Sledgehammer

Uses: Breaking rocks, driving posts or stakes, nudging a heavy timber into place and driving large spikes. Full size (8 lb.+) sledgehammers are primarily used during construction phases; small (4 lb.) sledges may be used to pound in nails.

Safety: Before swinging, the user should make sure others are clear and obtain a firm stance with feet spread to shoulder width and firmly planted. PPE includes leather gloves. Goggles should be worn when striking rocks.

Pinch Point Crowbar

Uses: This is an essential tool for prying and levering large, heavy objects such as boulders, logs and beams. Crowbars are heavy-duty steel and vary in length, weight and diameter. In general, Pinch Point crowbars have a 45 degree beveled chisel tip on one end and a rounded handle on the other. The bevel is used to obtain greater mechanical advantage.

Tips: For most purposes, a 54" size seems to work best.

Safety: Since the Pinch Point crowbar often lifts, moves, and positions heavy loads, it can be dangerous. Fulcrums and footholds should be secure. The user should stay out from under the bar and the load being moved, and avoid levering with the bar between his/her legs. Undivided attention should be given during use to avoid mashed fingers and toes or other injuries. As with any lifting device, the user should lift with the legs, not the back. PPE includes leather gloves and heavy leather boots. For additional safety, hard-toe boots are advisable.

Digging Bar (Tamping Bar)

Uses: The digging or tamping bar, generally somewhat longer than the crowbar, may also be used for levering, although only for smaller loads. The bar's primary purpose is for digging and tamping, for which it has a chisel point at one end and a flat disc at the other.

Tips: It is a handy tool for heavy trail work, including tamping back fill and setting trail signage posts.

Safety: Same as Pinch Point crow bar. Leather gloves are recommended.

Log Carrier

Uses: Carrying and moving heavy logs and timbers. The log carrier looks like a giant ice tong with long handles. It is a two-person tool.

Tips: Many hands make light work. Use as many log carriers and people as will comfortably fit along the length of the log to make the load manageable. In the absence of a log carrier, a Feldman, 3" wide nylon slings used for rigging applications, or length of 1" thick natural fiber rope can be wrapped around the log and the ends tied around a pick mattock handle.

Safety: The user should stand behind the handle of the carrier, facing the direction of travel and place both hands on the handle, bent at the knees, and all workers lift at once. Forearms should be roughly parallel to the ground when in the lifting and carrying position. Heavy weights are involved so caution should be used. Feet should be kept from under the log. PPE includes heavy leather boots and leather gloves.

Peavey or Cant Hook

Uses: Rolling and positioning logs and timbers. This includes rolling the log to move it to another site or to rotate it in place. The main difference between these two tools is the shape of the tool's end. Peaveys have a straight spike at the end whereas cant hooks have a short gripping tooth. Both are used for essentially the same purpose. Peaveys are quicker to reposition when rolling a log some distance and for maintaining momentum. Cant hooks provide for more precise rotating. When arranged as opposing pairs, either tool can serve as a log carrier if a true log carrier is not available.

Safety: The user should exercise caution not to roll logs onto his/her (or someone else's) toes. Logs may roll too fast and get away. Potential for severe injury is present whenever heavy weights are being moved. PPE includes leather gloves and heavy leather boots. Hard-toe boots provide an extra measure of protection.

Wedges

Uses: There are two kinds of wedges: saw wedges and splitting wedges. In trail work, splitting wedges are used for splitting timbers for use in log construction projects such as split-log bridges. They weigh four, five or six pounds, are made of steel, and should be purchased with crowned or beveled heads to reduce mushrooming and spalling. Saw wedges are used in felling trees or cutting fallen timber into pieces. When a blow down under tension begins pinching a chain saw or pruning saw blade, for example, a saw wedge may be driven in behind the blade to hold the cut open so the blade can be released.

Tips: Since the saw may accidentally strike a saw wedge, buy wedges that are soft enough not to damage the saw blade and resist sparking. Plastic, aluminum, and hardwood saw wedges are best. To keep from losing wedges in the brush or leaves, paint them bright colors.

Adze

Uses: Shaving and shaping timbers.

Safety: Always wear PPE when working with an adze: gloves, chaps, and eye protection.

POWER TOOLS

When the situation allows, the use of power tools is appropriate along the Ice Age NST. In most situations, power tools can substantially increase production. They allow fewer people to construct or maintain a given amount of trail in less time. However, they have certain drawbacks that must be recognized. Power tools can increase the potential for injury, especially in the hands of unskilled workers. Users must be particularly cautious to prevent injury to themselves or their co-workers and must wear PPE at all times. Power tools are generally heavier to carry than hand tools. They may not be worth the extra effort if long distances are being covered where only incidental work will be performed or the worksites are widely scattered. Check with the appropriate agency and or private landowner to see that the use of power tools is not prohibited.

All tools covered in this section require training to use properly, safely and efficiently. Read the owner's manual and handbooks on safe and efficient use of each power tool. If you have never used the tool before, work with an experienced person certified to operate the machinery.

Refer to Appendix 3—IATA Power Equipment Operator's Policy.

Check list for the safe operation of power tools:

- Read the Owner's Manual and all supplements (if any are enclosed) thoroughly before operating any power tool.
- Don't use any other fuel than that recommended in the Owner's Manual.
- Refuel in a safe place. Don't spill fuel or start power tools where you fuel them. Do not refuel a hot power tool; allow it to cool off. Be certain that the power tool has dried thoroughly before starting if fuel has spilled on the unit.
- Don't smoke while fueling or operating power tools.

Lawnmower

Uses: An ordinary side-discharge mower can be effectively used for clearing and maintaining trail, except in extremely rocky terrain. For grass, ferns and weeds (up to knee high) many feel that a lawnmower is more effective than a brush saw. It is more readily available and less expensive than a DR Mower®, but not as durable or powerful.

Tips: A mower with a 22" to 24" cut and adjustable wheels seems to work well. Wheels should be set as high as possible. A mower with a universal blade for easy replacement is desirable.

Safety: Rotary mowers can throw objects, injure others and can cause severe injury to the operator's extremities if a hand or foot gets under the mower deck. The operator should insure that other workers keep a considerable distance from the mower so that thrown objects do not cause injury. Extra caution should be used when operating on slopes, or if the vegetation is wet, to avoid slips and possible operator injury (see Owner's Manual). Sturdy leather boots should be worn. Ear protection should be worn if using the mower for extended periods or if the mower is louder than 80db.

DR Field Mower®

Uses: This sturdy machine is the mower of choice for cutting heavy grass, weeds, briars and saplings up to 1" diameter. A DR Mower® is simply a walk-behind, self-propelled brush-hog that is useful during trail construction and trail maintenance. Sickle-bar type mowers are not recommended for use.

Safety: Similar to the safety practices shown above under lawnmower, but even more critical with the DR Field Mower® because it is much more powerful. Ear protection is required. Untrained users should work with an experienced user first.

Brush Saw

Uses: Constructing and maintaining trail through areas of heavy brush, grass, briars and sapling sized trees. A powered brush saw allows one person to rapidly clear large areas. In some situations, a DR Mower® can accomplish the same tasks more easily and quickly, especially in grass and smaller brush.

Tips: Brush saws come in a variety of sizes. Trail work requires a more powerful unit than one that is used for lawn trimming. Generally, a brush saw with an engine of 90cc to 135cc, bicycle-type handlebars, and a body harness is recommended. For durability, a known brand such as Stihl FS90 or Husquevarna should be obtained. These saws also come with a variety of blades depending on the material to be cut. The most versatile blade is the triangular shaped Steel Brush Knife. Trail work requires a saw type or a universal grass-brush blade, not a string cutter. The brush saw should be supported by a shoulder harness, but can still become very tiring. Users should work in teams to make the job easier and switch positions regularly. When not cutting, the other person can remove brush from the trail but stay well clear of the blade.

Safety: The brush saw's open blade is on the end of a wand and can snag and swing violently to the side, making it prone to injure other workers rather than the operator. Other

workers should stay clear. Required PPE is ear protection, eye protection, gloves and leather boots. Hardhats are recommended.

Chain Saw

Chain saws are one of the most dangerous pieces of power equipment. The NPS and IATA's position is that only certified sawyers may operate chain saws on the Ice Age NST, including the main trail, branch trails, spurs, and side trails, on public and private lands.

If you are a certified sawyer (certified chain saw operator), intend to help a sawyer (i.e., be a sawyer's Swamper), or lead or work on a crew working with chain saws on any portion of the Ice Age NST, you must read this section, Appendices 1 and 2, and comply with the IATA Power Equipment Operator Policy. The IATA Power Equipment Operator Policy and relevant pages from the USDA's Forest Service's Health and Safety Code Handbook are in the Appendices Section.

Uses: Chainsaws are used for cutting medium to large size blow-downs, clearing heavy sapling growth during trail construction, cutting trees into pieces for wood construction projects. If there is a hazardous standing tree, consider relocating the trail until the hazard has fallen on its own. If the hazard is on state or federal land, contact the appropriate governing agency. Certified chainsaw operators may only fell standing trees within the dbh limitations noted on their certification card. (Class A Faller < 8" dbh; Class B Faller 8" to <24" dbh; Class C Faller 24+" dbh). Certifiers may further restrict chainsaw operators to "Bucking and Limbing Only," etc.

Tips: Saws with 16" blades are generally adequate for most trail work. Models should be obtained with chain brakes, low kick-back chain, reduced-radius bar tip, throttle lock, vibration damped handles, chain catcher in the right-hand guard, and spark arresters and high quality mufflers. The user should carry a tool kit in a pack (file, srench, and plastic wedge). A square-tooth chain is recommended for bore cuts.

Safety: Chain saws are one of the most dangerous pieces of power equipment. They may be used only by field trained-and-certified sawyers. Required PPE includes hardhat, face screen, hearing protection (usually sold as a unit), eye protection, safety glasses if no face screen, safety pants or chaps made from Kevlar, leather or Kevlar gloves, and above ankle leather boots with good traction, steel toed preferred. Chain saws should not be operated without the above PPE. Transport the saw with the plastic sheath in place.

As a safety precaution, sawyers should work with a partner (a sawyer helper, aka a Swamper). The Swamper must wear an approved hard hat, hearing, and eye protection. There should not be more than two swampers per sawyer in any given work area.

During felling operations, the work area shall consist of a circle with the tree being felled at its center and its radius equal to two times the height of the tree. With two sawyers operating that distance would be four tree lengths from one tree to another. No one but the Sawyer and the Swamper(s) are permitted within this area while the work is being done. Sawyers and Swamper(s) should discuss and agree upon safety zones and escape routes before felling begins. When a Sawyer is felling a standing tree, lodged tree, or snag, the Sawyer and the Swamper(s) should identify the safety zones and plan escape routes together. The Swamper(s) should then stand in the safety zone, at 45 degree angles from the side and back of the Sawyer, on either side. The Swamper should never move behind the tree to be felled. Both Sawyer and Swamper should be prepared to use the escape route(s). Neither Sawyer nor Swamper should ever assume they can predict what a tree – especially a dead or damaged tree -- will do and should always expect the unexpected.

Rest throughout the day, drink lots of water, and eat small snacks frequently to keep your energy level up. Do not, under any circumstances, use a chain saw after drinking alcohol or taking drugs, including prescription drugs that may cause drowsiness.

Check list for the safe and efficient operation of a chainsaw:

- Do not drop-start a saw or start a saw on your leg or knee. Put your boot into the handle when the saw is on the ground. Never operate a chainsaw when you are fatigued.
- Keep all parts of your body and clothing away from the saw chain when starting or running the engine. Before you start the engine, make sure the saw chain is not contacting anything.
- Be aware of kickback! Hold the saw firmly with both hands when the engine is running; use a firm grip with thumbs and fingers encircling the chainsaw handles and watch carefully what you cut. Kickback (saw jumps or jerks up or backward) can be caused by:
 - Striking limbs or other objects accidentally with the top tip of the saw while the chain is moving.
 - Striking metal, concrete, or other hard material near or buried in the wood.
 - Running engine slowly at start of or during cut.
 - Dull or loose chain.
 - Cutting above shoulder height.
 - Inattention in holding or guiding saw while cutting.
- Do not attempt to operate the saw while in a tree, on a ladder or on any other unstable surface.

- Be sure of your footing and pre-plan a safe exit from a falling tree or limbs.
- When cutting a limb that is under tension, be alert for springback so that you or your Swamper(s) will not be struck when the tension is released.
- Use extreme caution when cutting small size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
- Vibration – Avoid prolonged operation of your chainsaw and rest periodically, especially if your hand or arm starts to have loss of feeling, swell or become difficult to move.
- Exhaust fumes – Do not operate your chainsaw in confined or poorly ventilated areas.
- Observe all local fire prevention regulations. It is recommended that you keep a fire extinguisher and shovel close at hand whenever you cut in areas where dry grass, leaves or other flammable materials are present. Note: Spark arrester screens are available for installation in your muffler, where fire regulations require them. Check local regulations for your special requirements.
- Turn off your saw when moving between cuts and before setting it down. Always carry the chainsaw with the engine stopped, the guide bar and saw chain in the rear, and the muffler away from your body.
- Use wedges to help control felling and prevent binding the bar and chain in the cut.
- Don't touch or try to stop a moving chain with your hand.
- Don't allow any other person or animal close to a running saw or where a tree is being cut down.
- Don't touch or let your hand come in contact with a hot muffler, spark arrester or spark plug wire. Don't run the saw without a muffler, exhaust stack or spark arrester. Keep screens and baffles clean. Keep spark plug caps clean and in good repair. Replace promptly if necessary.
- Keep the chain sharp and snug on the guide bar.
- Don't allow dirt, fuel or sawdust to build up on the engine or outside of the saw.
- Keep all screws and fasteners tight. Never operate a chainsaw that is damaged, improperly adjusted or not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released. Keep the handles dry, clean and free of oil or fuel mixture.
- Safe chainsaw operating techniques should be constantly stressed to all users. If you observe an unsafe operation of a chainsaw don't be shy; speak up! Tell the operator of the observed unsafe method to help prevent an accident.

I Chose to Look the Other Way

I could have saved a life that day,
But I chose to look the other way.
It wasn't that I didn't care;
I had the time, and I was there.

But I didn't want to seem a fool,
Or argue over a safety rule.
I knew he'd done the job before;
If I spoke up he might get sore.

The chances didn't seem that bad;
I'd done the same, he knew I had.
So I shook my head and walked on by;
He knew the risks as well as I.

He took the chance, I closed an eye;
And with that act, I let him die.
I could have saved a life that day,
But I chose to look the other way.

Now every time I see his wife,
I know I should have saved his life.
That guilt is something I must bear;
But it isn't something you need to share.

If you see a risk that others take
That puts their health or life at stake,
The question asked or thing you say
Could help them live another day.

If you see a risk and walk away,
Then hope you never have to say,
"I could have saved a life that day,
But I chose to look the other way."

--Don Merrell

Section 3. Injury Reporting Procedures

DIRECTOR'S ORDER #7: VOLUNTEERS IN PARKS

Approved: /s/ Fran P. Mainella
Director

Effective Date: June 13, 2005

Duration: This Director's Order will remain in effect until revised or terminated.

8. Benefits and Protection/Risk Management

8.1 VIPs will be treated as Federal employees for the purposes of (1) compensation for work-related injuries (see 5 USC 8101(1)(B) and 16 USC 18i(c))...

National Park Service VIPs (Volunteers-In-Parks) are entitled to submit injury claims for compensation to the US Department of Labor, just the same as Federal employees of the National Park Service, provided that:

- 1) The volunteer is officially signed up on either a Group or Individual OF-301a Volunteer Agreement.
- 2) The injury was sustained while performing a volunteer task within the volunteer's "scope of duties" as defined within the Job Description portion of the OF-301a Volunteer Agreement.

These topics are addressed under the "**On-Line Resources**" section of this Safety Handbook.

Injury Reporting Kits

Because volunteers of the Ice Age National Scenic Trail work in distant locations from NPS offices where immediate access to US Department of Labor forms is not possible, **Injury Reporting Kits** have been created and distributed to all chapters and affiliate groups. It is strongly recommended that volunteers review the materials in these kits before their use is required, that the kits be made available to volunteers in all work activities, and that volunteers be advised on the location of the kits within a chapter or work area (i.e.: staged in a tool trailer, carried by a crew leader, etc.). Each kit was initially set up to process up to three separate injury incidents. If your chapter received five kits, you have

adequate resources to process 15 injuries, and so on. Replacement materials or addition kits are available from Volunteer Coordinator Dan Watson.

When an Injury Happens

- First and foremost, *Seek Medical Attention!!!* We can always deal with the paperwork later.
- Whenever possible, without delaying transport and treatment, take the **Injury Report Kit** with you to the clinic or emergency room.
- Advise the receptionist that you are a Federal Volunteer and request direct billing to the US Department of Labor. Show them the document within the Injury Reporting Kit entitled **OWCP and the Treating Physician**. The upper left corner provides the hospital with the mailing address for direct billing to the US Department of Labor.
- If the medical facility declines to directly bill the US Department of Labor, Don't Delay Your Medical Attention with undue arguing... present your personal insurance card and get the help you need.
- If you use your personal insurance card and have any out-of-pocket expense or co-pay, Save Your Receipts for possible later reimbursement from the US Department of Labor.
- From within the Injury Report Kit, present the treating physician with one of the copies of the **CA-16 Form (Authorization for Exam)**. It should have a colored sticker at the top of the form that reads: "Take to Hospital." Have the physician **complete Part B** of the CA-16 Form (back side of first page).
- It is highly recommended that you convince the physician to complete Part B on-the-spot. It will speed up the process of completing your claim to the US Department of Labor. Return the completed CA-16 to Volunteer Coordinator Dan Watson ASAP using the pre-addressed envelope provided within the Injury Report Kit. It is acceptable to leave the CA-16 and envelope with the physician... but your injury claim processing may be delayed if the physician does not attend to this paperwork promptly. *In either case, the completed CA-16 must be mailed to Dan Watson, not directly to the US Department of Labor.*
- If you are directed to fill a prescription at a pharmacy, once again, you should present the pharmacist with the **OWCP and the Treating Physician** document and request direct billing to the US Department of Labor. Again, if you end up using your personal insurance to fill a prescription, save your pharmacy receipts for any co-pay or out-of-pocket expenses.

- As soon as possible, notify Volunteer Coordinator Dan Watson of any injury related to volunteer work on the Ice Age NST. He will assist you to complete your injury claim to the US Department of Labor, Office of Worker's Compensation Programs (OWCP). It is important that Dan Watson be involved in the process at the earliest opportunity.
- Daniel Watson, 111 E. Kellogg Blvd, Suite 105, St. Paul, MN 55101, email: daniel_watson@nps.gov
Office: 651-293-8452 Cell: 715-441-7717
- The US Department of Labor makes all determinations on injury coverage or reimbursement to both Federal employees and volunteers. There is no National Park Service "*Insurance Policy*."

Appendix 1

Appendix 1A

Ice Age NST Chain Saw Training and Certification Policy

The Ice Age National Scenic Trail endorses the approach to employee worker-safety programs taken by the Ice Age Trail Alliance, National Park Service, and the U.S. Dept. of Agriculture (USDA) United States Forest Service, and joins with those agencies in the administration of safety programs to protect volunteers and employees working on all trails coincident with the Ice Age National Scenic Trail.

In its authorization to equip and train Ice Age NST volunteers as well as in its work with cooperating State and Federal agencies, the Ice Age NST:

☑ Recognizes that individual volunteers have primary responsibility for their own personal safety and for compliance with the requirements for chainsaw and crosscut saw operators. Furthermore, each volunteer engaged in trail chapter or affiliate-sponsored maintenance and construction activities assumes personal responsibility for following directions, assessing his or her own physical condition and preparedness for engaging in trail work activities, and coming properly equipped and clothed in a manner appropriate for the location, duration, weather conditions, and proposed work.

☑ Follows current individual safety requirements that apply to federal employees and volunteers, but recognizes that volunteers may require additional time, resources, and assistance to meet agency requirements and goals. Those requirements can be found in the ***USDA Forest Service Health and Safety Code Handbook's "Minimum Requirements for Chainsaw Operation"* (Section 22.48, pages 20-47 through 20-62) and "OSHA General Requirements for Logging Operations, 1910.266." See *also list of required Personal Protective Equipment below.*

☑ Follows the USFS Missoula Technology and Development Center's (MTDC) curriculum, or its agency-approved alternatives such as Game of Logging or Wildland Fires Chainsaws S-212, for chainsaw and crosscut saw certification.

☑ In addition to the chainsaw certification, sawyers must have current certification in CPR/First Aid.

Personal Protective Equipment for Chainsaw Operators

The following personal protective equipment (PPE) is required by the USDA Forest Service and the Ice Age NST for all chainsaw operators:

1. OSHA-approved logger's hard hat
2. Eye protection
3. Hearing protection (85 + decibels)

4. Leather gloves
5. Long Sleeve Shirt
6. UL-approved chainsaw chaps or pants (chainsaw chaps must meet the requirements of the US Forest Service, and it is recommended that they overlap boot tops a minimum of 2 inches.)
7. Heavy 8" high laced boots with nonskid soles (cut-resistant or leather, waterproof or water-repellant, hard toes are optional).
8. Sawyers must possess an OSHA-approved logger's First Aid Kit whenever working with chainsaws.

*** The OSHA –approved First Aid Kit for logging activities (chainsaw operations) includes:

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards • Subpart: R • Subpart Title: Special Industries
- Standard Number: 1910.266 App A • Title: First-aid Kits (Mandatory).

The following list sets forth the minimally acceptable number and type of first-aid supplies for first-aid kits required under paragraph (d)(2) of the logging standard. The contents of the first-aid kit listed should be adequate for small work sites, consisting of approximately two to three employees. When larger operations or multiple operations are being conducted at the same location, additional first-aid kits should be provided at the work site or additional quantities of supplies should be included in the first-aid kits:

1. Gauze pads (at least 4 x 4 inches).
2. Two large gauze pads (at least 8 x 10 inches).
3. Box adhesive bandages (band-aids).
4. One package gauze roller bandage at least 2 inches wide.
5. Two triangular bandages.
6. Wound cleaning agent such as sealed moistened towelettes.
7. Scissors.
8. At least one blanket.
9. Tweezers.
10. Adhesive tape.
11. Latex gloves.
12. Resuscitation equipment such as resuscitation bag, airway, or pocket mask.
13. Two elastic wraps.
14. Splint.
15. Directions for requesting emergency assistance.

[59 FR 51672, Oct. 12, 1994; 60 FR 47022, Sept. 8, 1995]

USDA, US Forest Service's Health and Safety Code Handbook, Section 22.48, Chain Saw Operations

22.48 - Chain Saw Operations. Chain saw operations include, but are not limited to, felling, bucking, brushing, limbing, and specialized uses. Individual chain saw operators have the obligation to say "NO" and walk away from any situation they determine to be an unacceptable risk. Complete a JHA for chain saw related work projects and activities (sec. 22.08).

22.48a - Standards. The standards for noise exposure, explosives, PPE, hand and portable powered tools, logging operations, first aid training, and hazard communication are in 29 CFR 1910.95, 1910.109, 1910.132, 1910.151, 1910.242, 1910.266, 1910.1030, and 1910.1200; and 1926.50, 1926.52, 1926.100 - 1926.102, 1926.301, and 1926.302.

22.48b - Qualifications.

1. In addition to having the applicable training and certifications listed in sections 22.07 and 22.48a, all saw operators shall be currently certified by a nationally recognized organization to render first aid and perform cardiopulmonary resuscitation (CPR). Supervisors shall ensure that saw operators receive training or retraining in first aid and CPR before certifications expire. Refer to section 52.3 for direction on the bloodborne pathogens program.
2. Every unit at the Region, Station, Area, and Institute level that utilizes crosscut saws and chain saws shall develop an approved crosscut/chain saw program that includes the following minimum requirements for employees involved in crosscut/chain saw work projects and activities:
 - a. Classroom and field training encompassing in part or in total a national training program, such as Wildfire Power Saws S-212 (sec. 22.06).
 - b. Demonstration of sawing ability (to a certified operator or certified instructor) in functional areas.
 - c. Supervision by a certified instructor or certified operator of saw work by new operators.
3. The Regions, Stations, Area, and Institute shall appoint a crosscut/chain saw Program Coordinator. As a minimum the Program Coordinator shall:
 - a. Possess current knowledge of policy and regulations pertaining to crosscut/chain saws and related equipment.
 - b. Be trained and certified to evaluate and certify or recertify saw instructors.

- c. Be certified at the highest level of operator proficiency.
4. Sawyers must maintain national certification cards indicating their proficiency levels as follows:
- a. "A" apprentice sawyer. These sawyers have completed the nationally approved classroom and field training for general saw work (such as bucking, limbing, and the first basic steps in felling) or specialized uses (such as construction, maintenance, and fencing). Generally, they are trained at the local unit and must be supervised by a B or C level sawyer during saw work activity, which may include slashing and felling in the least complex situations. This certification expires 3 years after the date of issue. The certifier has full authority to impose restrictions on apprentice sawyers as deemed necessary.
 - b. "B" intermediate sawyer. This level includes skilled saw operators capable of performing only those tasks as approved by a certifier and documented on the back of the certification card. During saw activities, intermediate sawyers are not allowed to field certify sawyers. Certification is restricted to "C" advanced sawyers and "C" certifiers.

This certification expires 3 years from the date of issue. The certifier has full authority to impose restrictions on intermediate sawyers as deemed necessary.

Appendix 2 Hazard Analyses

Appendix 2A Hazard Analysis Chain Saw Operation

Hazards for Chain Saw Operators and Swampers

Hazard	Definition	Ways to Avoid
Throwback	As the tree falls through other trees or lands on objects, those objects or branches may be thrown back toward the logger	Watch tree as it falls from safety zone and use escape path
Dangerous Terrain	If the tree falls onto stumps, rocks, or uneven ground, the tree or limbs may bounce, break or roll	Clear terrain if possible; watch tree as it falls from safety zone and use escape route
Lodged Tree (Hang)	A tree that has not fallen completely to the ground because it is lodged or leaning against another tree	Sawyer will likely drop the tree in chunks, increasing the vertical stance of the tree. The tree will fall or possibly break off and hit another tree. If tree remains hung up, do NOT move under it to pull it down!
Widow-makers	Broken-off limbs that are hanging freely in the tree to be felled or in trees close by	Before the tree is felled, scan overhead; move out from under any widow-makers
Snag	Standing dead tree, standing broken tree, or a standing rotted tree to be felled nearby may break off when falling	The most unpredictable situation. Stand 2 tree lengths away if can, otherwise stand in safe zone and use escape path.
Spring Pole	A tree, part of a tree, limb or sapling under stress or tension due to the pressure or weight of another tree or object will spring back sometimes violently	Identify spring poles together before limbing and bucking. Stand away while sawyer cuts
Freshly Uprooted Tree	The root end may spring back, sometimes violently, when trunk is cut	Do NOT stand near root area. Stand on uphill side, away from roots.
Barberchair	Tree trunk may shoot backwards violently when back cut or plunge cut is below level of the face cut and the hinge is cut	Do NOT stand behind tree. Sawyer and swamper should be to the side in safe zone and use escape route.

Extreme Weather	Strong winds, hazardous snow or ice conditions, electrical storms, dense fogs, fires, landslides and darkness.	Terminate work and move to safety. Watch tree tops for fresh winds that may impact direction of fall
Misunderstood signals or noises	<i>E.g.</i> , Swamper assumes sound of chain brake signals he/she can approach more closely	Look at each other and watch for repeat of activity or signal
Chainsaw noise	Damage to hearing due to chain saw operation noise	Always wear ear protection when within 15' of running saw
Wood chips from sawing	Flying chips can lodge or embed in unprotected eyes	Helpers should also wear eye protection near running saw

Appendix 3

Power Equipment Policy

Ice Age Trail Alliance, Inc. (IATA)

Policy: Power Equipment Operator Requirements

Approved: 1.25.08

Effective Date: 1.25.08

Related Policies: NPS/WDNR/USFS

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5.0 Sawyer Recognition

1.0 Background and Purpose

Power equipment tools are used along the Ice Age Trail for trail construction, maintenance and land stewardship purposes. These tools provide a means to efficiently maintain or remove vegetation within the trail corridor and trailway lands. Power equipment, as defined herein, includes, but is not limited to push mowers (nylon- or metal-bladed), brush cutters (nylon- or metal-bladed), power pruners and chainsaws.

The use of power equipment presents a clear and present danger to the user and anyone in close proximity. Moving parts, flying debris and falling trees are inherent hazards associated with power tool use. In addition, trail work often occurs in places that are distant from professional medical care.

The use of power equipment brings with it a responsibility that operators protect themselves and those working with them from injury. The IATA stands to minimize the likelihood of serious medical and liability claims if staff and volunteers follow a few required and recommended safety procedures.

The National Park Service (NPS) has instituted chainsaw safety requirements from tort liability to paying medical expenses for injuries that govern volunteer eligibility for Federal insurance coverage under the Volunteers-In-Parks and Volunteers-in- Forest (United States Forest Service administered lands) program. The Wisconsin Department of Natural Resources (WDNR) has instituted safety policies for chainsaw and other power equipment operated on state-owned

lands by non-department employees. This policy will bring a standard measure of safety requirements to the organization and is intended to satisfy IATA partner (NPS and WDNR) requirements.

2.0 Authority for This Policy

Authority for this policy is provided by the IATA bylaws and corporate law.

3.0 Power Equipment Requirements

3.1 IATA staff and volunteers who operate Power Equipment on the Ice Age Trail, or on trailway lands along the Ice Age Trail regardless of land ownership, must wear appropriate Personal Protective Equipment per the table below.

3.2 Any IATA staff member or volunteer who operates a chainsaw on the Ice Age Trail or on trailway lands along the Ice Age Trail, regardless of land ownership, must have taken approved chainsaw safety training within the last three years and should be able to provide proof of having done so.

3.3 Chainsaw Operators/Crews will have a portable fire extinguisher and a Logger First-Aid kit within a reasonable distance of the worksite.

3.4 Operators will maintain current First Aid and CPR certification and have in their possession and know how to use appropriate communication equipment, e.g., cell phones and two-way radios, in case of injury.

<i>Minimum</i> PPE required	Brush cutter (hand-held)	Push mower (whip or metal blade)	Chainsaw†	Power pruner†
Hard Hat	No	No	Yes	Yes
Ear Protection	Yes	Yes	Yes	Yes
Face/Eye Protection	Yes	Yes	Yes	Yes
Gloves (leather)	Yes	Yes	Yes, or cut-resistant	Yes
High-Visibility Vest or Jacket	No	No	Yes	Yes
Leg Protection	Leather, nylon, or canvas	Leather, nylon, or canvas	OSHA-approved minimum 4-layer cut-resistant	OSHA-approved minimum 4-layer cut-resistant

Protective Footwear	Leather boots	Leather boots	Cut-resistant steel-toe boots or steel-toe boots with cut-resistant overlay	Cut-resistant steel-toe boots or steel-toe boots with cut-resistant overlay
Training Required	No	No	FISTA, or other OSHA-compliant	No

† Must meet OSHA 29 CFR requirements. OSHA-approved Kevlar, Ballistic nylon and Engtex 4-6 layer materials are acceptable.

4.0 Safety-First Strategies

Volunteer trail workers are advised to practice the following:

4.1 Have adequate training, knowledge and experience to operate power or non-powered equipment to perform the task at hand.

4.2 Practice safe tool use, storage and transport.

4.3 Inform someone where you are going and when you plan to return.

4.4 When operating power equipment work with a partner or in teams of three.

4.5 Have a cell phone and/or two-way radio and first-aid kit on-site.

4.6 Staff and volunteers who lead on-the-ground IATA events, including hikes and educational presentations, should prepare and have available a Project Safety Net indicating, at minimum: emergency medical services contact information, directions to the nearest medical facility from the event location, and known hazards that may be encountered while volunteering on that specific segment of the Ice Age Trail.

4.7 All IATA staff will maintain current certification in basic First Aid and CPR trainings.

4.8 Volunteers and outing leaders will be encouraged by staff and supported financially as able by the organization and the organizations volunteer chapters to be certified in basic Chainsaw Safety, First Aid and CPR training(s).

5.0 Sawyer Recognition

All IATA staff and volunteers who show proof of F.I.S.T.A or other approved chainsaw safety training and meet the requirements outlined in Section 3.0 will be presented with a certification card indicating the date and expiration of their training(s).