

# Sawyer Volunteer

## North Country National Scenic Trail

### Introduction

This National Park Service (NPS) volunteer position is based along the North Country National Scenic Trail (Trail), the longest of 11 national scenic trails stretching more than 4,600 miles from Vermont to North Dakota. The NPS volunteer is responsible for performing work associated with chainsaw and crosscut saw operations. Volunteers serving as a sawyer may not perform any task that is beyond their physical limits or training. The volunteer is further responsible for complying with safety and training policies, assessing, identifying, and mitigating risks before beginning work, maintaining a safe and secure work zone, completing projects according to trail standards, caring for and maintaining equipment, working cooperatively with others, and fostering a safe, inclusive, and positive work environment. The volunteer should coordinate projects with the chapter trail maintenance coordinator or chapter leadership, and/or North Country Trail Association regional trail coordinator (RTC) as appropriate.\* Volunteer policy questions should be directed to the NPS volunteer program manager.

***This position requires the volunteer to read and acknowledge the Personal Safety and Saw Operations Job Hazard Analyses on the Volunteer Service Agreement. If operating a crosscut saw, the volunteer should read and acknowledge the Crosscut Saw Job Hazard Analysis on the agreement.***

### Requirements for the Position

- Receive and maintain first aid and CPR certification. Training must include an in-person skills evaluation by a certified instructor. Certification must be renewed every two years. Completion of first aid and CPR training is a prerequisite before attending any saw training.
- Complete [Trail Safe!](#), an online safety training, or NPS Operational Leadership. This is a one-time requirement, though the course may be reviewed as many times as desired as a refresher. Completion of Trail Safe! is a prerequisite before attending any saw training and is required immediately for current certified sawyers.
- Attend Trail-approved NPS or US Forest Service chainsaw training taught by agency-certified and approved instructors. Certification must be renewed every three years.
- May not operate a saw alone. At least one additional person who is also first aid and CPR certified and able to provide emergency assistance must be within eyesight of the sawyer operating a saw.
- Provide the following documents to Volunteer Program Manager Nic Loiseau ([nicole\\_loiseau@nps.gov](mailto:nicole_loiseau@nps.gov)) to receive/maintain sawyer certification:
  - Documentation of Trail Safe! training completion
  - Copy of current first aid and CPR certification
  - Copy of sawyer field performance evaluation
  - Copy of any other training evaluation/assessment
  - Copy of any agency-issued sawyer card (US Forest Service or other agency, if applicable)

### Major Duties

- Responsible to “no-go” any project they do not feel comfortable with, for any reason.
- Flag and report hazard trees/overly complex projects to chapter leadership and/or RTC\* if risk and complexity exceeds local sawyer qualifications or comfort level. Alternative solutions may include but, may not be limited to, seeking assistance from higher-certified sawyers from outside

the local chapter, temporarily rerouting that section of trail, or temporarily closing that section of trail.

- Responsible for controlling the work zone and for ensuring the safety of all personnel and resources within the work zone.
- Ensure work is performed safely and within prescribed NPS standards.
- Address safety concerns and conduct safety talks at the beginning of each workday, including establishing and reviewing a 1) Safety and Emergency Response Plan, 2) site communications plan (hand signals, whistles, etc), 3) posting lookouts to secure the work zone, and 4) the role of the swamper.
- Maintain chainsaw, crosscut saws, PPE, and accessories, and ensure equipment is in good repair before starting any chainsaw operation. Protect equipment and tools from damage during transport or use. Store properly and inspect regularly. “Red tag” and remove any damaged/ faulty equipment from inventory until repaired or replaced.
- Follow proper safety procedures when handling tools and maintain safe distancing when working around others and equipment.
- Monitor site conditions, environmental conditions, personal fatigue and mental sharpness, and crew members’ fatigue throughout the day and stop work if needed.
- In consultation with swamper, other certified sawyers, and/or other crew members, conduct pre-operational risk assessment of project before beginning work; develop a plan to mitigate risks; and proceed only if risks and project complexity fall within the sawyer’s level of certification and comfort level.
- Remove small diameter trees (less than 4” diameter) from trail corridor or project areas within the scope of training and certification (“brushing”).
- Limb and buck downed or felled tree into shorter lengths within the scope of training and certification (“limbing” and “bucking”).
- Fell trees within the scope of training and certification (“felling”).
- Use saws to cut large dimensional timber and posts and fabricate rough trail structures within the scope of training, skills, and experience.
- Ensure site is “naturalized” and made safe after saw operations have been completed: collect trash and other materials; stumps and stems are flush-cut with the ground; branches, logs, and other debris moved well off the trail and dispersed; cut ends of limbs and logs pointed away from the trail as possible; remove loose hanging branches; flag any overhead hazards that cannot be safely removed.
- Mentor, advise, and assist other sawyers within the limits of certification.

### **Physical Demands**

- May require walking five or more miles on uneven surfaces and variable terrain. Foot travel may be along completed trail, unfinished trail, or cross-country.
- May require standing for extended periods of time
- Requires carrying full kit of tools, equipment, fuel, water, and PPE to work zones.
- Requires carrying additional personal items such as small electronic devices, food, insect repellent, etc.
- Requires physical effort in reaching, bending, turning, or moving hands, arms, feet, and legs.
- Requires lifting, carrying, pushing, and pulling up to 50 pounds on uneven surfaces.
- Requires physical effort and coordination in operating tools.

### **Work Environment**

Most projects will take place outside in all types of weather conditions. Weather can be unpredictable and can change quickly. The area experiences thunderstorms, high winds, rain, snow, ice, high heat,

high humidity, and extreme cold. The Trail is also home to a number of insects including biting flies, mosquitos, and ticks, as well as bear, feral dogs, and other potentially dangerous animals.

### **Safety Considerations**

Safety is the number one priority! It is the individual responsibility of every volunteer to watch for hazards or unsafe operations and to call for an immediate work stop if safety is compromised. Watch out for each other; Everyone is empowered to speak up.

Work may involve walking, carrying loads over long distances, and using a variety of hand and powered tools; and frequently involves the possibility of exposure to overhead hazards, poisonous plants, blisters, bruises, muscle strains, cuts and scrapes, sunburn, and insect bites. To protect against potential hazards and serious injuries, the volunteer must follow proper safety procedures and use PPE as prescribed for projects. All injuries and near misses must be reported to Volunteer Program Manager Nic Loiseau at 616-302-9842 and the RTC\* immediately following the incident or as soon as safely possible if treatment is needed.

The sawyer is responsible for ensuring that each operation includes a “safety station” within 100 feet of the work zone that contains a first aid kit suitable for the current chainsaw operation and associated crew size, and a Safety and Emergency Response Plan.

### **Personal Protective Equipment (PPE)**

PPE must be worn as prescribed as described in the Job Hazard Analysis to perform assigned tasks and based on the project site, local policies, and local conditions. At a minimum, all NPS volunteer sawyers must wear:

- Sturdy work boots
- Long pants
- Long sleeve shirt
- Hard hat (meets or exceeds ANSI Z89.1; recommended no more than five years old)
- Chainsaw chaps (meets or exceeds ASTM F-1897 or USFS 6170-4F)
- Eye protection (meets or exceeds ANSI Z87.1)
- Hearing protection (meets or exceeds ANSI Z133.1)
- Leather, Kevlar, or similar work gloves (recommended)
- Face shield (recommended)

### **Scope of Contacts**

Volunteer will have regular contact with Trail volunteers and staff, and potential contact with trail users, landowners, partner agency staff, and the public.

### **General Knowledge, Skills, and Abilities Associated with the Position**

- NPS or US Forest Service chainsaw or crosscut saw certified.
- CPR and first aid certified.
- Completion of Trail Safe! or NPS Operational Leadership training.
- Knowledge of Trail chainsaw and crosscut saw policies and standard operating procedures.
- Knowledge of chainsaw and/or crosscut saw functional operation and safety features.
- Skill in maintaining chainsaws and/or crosscut saws, associated tools, and PPE.
- Ability to identify potential hazards, evaluate project complexity, and conduct pre-work risk assessments.
- Skill in identifying and accounting for reactive forces that exist during saw operations.
- Skill in estimating tree heights, diameter, and lean.

- Skill in identifying tree defects that may affect safe saw operations.
- Skill in employing a variety of cutting techniques to cut notches, release binds, release spring poles, and other project-specific purposes.
- Ability to hike up to five miles on various terrain and perform strenuous physical labor.
- Ability to work as part of a team.
- Ability to safely operate and maintain power tools in a safe and acceptable manner.
- Ability to understand and follow oral and written instructions.
- Ability to tolerate a variety of weather and working conditions.

### **Recommended Training or Certifications**

- Read and understand the [\*Handbook for Trail Design, Construction, and Maintenance\*](#).
- Watch the videos in the [resource center](#) on the NCTA website.
- Receive on-the-job training from higher rated sawyers to build skills and experience for advanced certification.

### **Personal Vehicles**

If they possess a current and valid driver's license, sawyer volunteers are authorized to use their personal vehicle for the following activities:

- Towing a Trail tool trailer.
- Driving from one work site to another.
- Shuttling other volunteers from one work site to another.

### **Reimbursement**

- Reimbursement will be provided for first aid and CPR training (reimbursable expense through NCTA).
- Volunteer will not be reimbursed for mileage, saw gas, oil, or other expenses.

### **Benefits to the Volunteer**

- Opportunity to become part of the Trail's history and to support and contribute to the nation's longest national scenic trail, the National Trail System, and the National Park Service as an official NPS volunteer.
- Volunteer is eligible for an America the Beautiful Volunteer Pass after accumulating 250 hours or more, unless they already possess an America the Beautiful Pass Senior, Assess, or Military Pass.
- Receive recognition items for hours of service.
- Training opportunities as it relates to maintaining the trail.
- Resume builder and hands-on experience.

### **Program Administration**

The North Country National Scenic Trail Volunteer-In-Parks (VIP) program is co-managed by the National Park Service and North Country Trail Association. Physical volunteer forms are kept in a locked cabinet at the NPS office in Lowell, Michigan. Electronic data is stored in Blackbaud Raiser's Edge (a platform managed by NCTA) to allow for volunteer hours and award tracking.

### **NPS Anti-Harassment Policy**

The National Park Service (NPS) is committed to providing a work environment free from discrimination and harassment based on race, color, religion, sex (including pregnancy and gender identity), sexual orientation, national origin, age, disability, family medical history (including genetic

information), status as a parent, marital status, political affiliation, and one that is free from and illegal retaliation. The NPS will not tolerate offensive sexual or non-sexual harassing behavior against any NPS employee, intern, volunteer, contractor or other nonfederal employee, visitor, or other member of the public. The NPS also will not tolerate adverse treatment of employees or volunteers because they report harassment or provide information related to such complaints.

Safe behavior is considered a condition of volunteering with the NPS. Volunteers are expected to adhere to all park policies, management directives, and best practices regarding safety. Volunteers are expected to speak candidly if they are concerned about the level of risk they observe and bring any safety concerns to the volunteer program manager's attention, either directly or anonymously. Volunteers will participate in required safety trainings and fully adhere to policies and programs designed to assist them in performing work safely. Failure to follow directives related to safety may result in termination.

Additional information regarding this policy can be found in NPS Director's Order 16E, NPS Anti-Harassment Policy, that is available on the North Country Trail Association website.

***Please acknowledge that you have read and received a copy of this SAWYER Position Description on the Volunteer Service Agreement (OF301a.)***

***\*Volunteers associated with a Trail affiliate should coordinate and contact leadership within their organization.***

**National Park Service  
North Country National Scenic Trail  
Job Hazard Analysis**

<b>1. Work Project/Activity</b> <i>PERSONAL SAFETY*</i>	<b>2. Location</b> <i>North Country NST</i>	<b>3. Originator</b> <i>Nicole Loiseau</i>	<b>4. Job Title</b> <i>Volunteer Program Manager</i>
<b>5. Name of Reviewer</b> <i>Chris Loudenslager</i>	<b>6. Job Title</b> <i>Superintendent</i>	<b>7. Date Prepared/Revised</b> <i>4/2/21</i>	<b>8. Number of Pages in this JHA</b> <i>8</i>

*\*This JHA is intended for trail construction and maintenance, trail support, sawyer, and swamper volunteers.*

**General Safety Topics & Hazards**

<b>Covid-19 &amp; Other Close Contact-Related Diseases</b>	<ul style="list-style-type: none"> <li>○ Follow Center for Disease Control and Prevention, local, and NPS/North Country Trail Association guidance.</li> <li>○ Stay home if you are not feeling well and/or have been exposed to someone with the virus.</li> <li>○ Wear a mask that covers both mouth and nose.</li> <li>○ Maintain a six-foot distance from others.</li> <li>○ If carpooling, all occupants must be masked.</li> <li>○ Clean and disinfect vehicles, tools, and equipment before you use them. Clean tools and equipment once you finish with them. Clean and disinfect frequently touched objects and surfaces using generally available household cleaners or EPA registered disinfectants.</li> <li>○ Avoid touching your eyes, nose, and mouth.</li> <li>○ Wash your hands often with soap and water for at least 20 seconds. When handwashing facilities are not available, use hand sanitizer that contains at least 60% alcohol.</li> </ul>
<b>Situational Awareness</b>	<ul style="list-style-type: none"> <li>○ It is highly recommended to take Trail Safe!, a self-paced online safety training.</li> <li>○ Be aware of your surroundings, potential hazards, and the whereabouts of others.</li> <li>○ Communicate with others.</li> <li>○ Let other team members know when you see a hazard. Avoid working near known hazards.</li> <li>○ Yell “STOP” if you see a hazard.</li> <li>○ Listen for the Alarm (L.F.T.A.) often subtle, internal warnings about unsafe acts are received before an incident occurs. Tune in to this warning which is often manifested as an uneasy feeling or idea that something is wrong. This feeling is diminished when we are in such a hurry or are so preoccupied that the matter distracts us from feeling different when faced with an unsafe situation. Listen for the Alarm and heed the warning the first time. Slow down and remain focused on the task at hand.</li> <li>○ Step Back, Think, Organize, Proceed (STOP). Step back and consider all aspects of the task. Think about what you are about to do. Organize the task and others to ensure quality of task accomplishment. Proceed in a determined effort to accomplish given tasks in a safe manner.</li> </ul>
<b>Personal Protective Equipment (PPE)</b>	<p>PPE is equipment worn to minimize exposure to hazards that cause serious injuries. Examples include the following:</p> <ul style="list-style-type: none"> <li>○ <u>Gloves</u> – Offer protection from hand injuries and exposure. Leather gloves should be worn while using and carrying hand tools and power equipment.</li> <li>○ <u>Sturdy work boots or trail shoes</u> – Offer protection from foot injuries and exposure. Appropriate closed toe footwear is required: open toe shoes such as sandals are prohibited.</li> </ul>

	<ul style="list-style-type: none"> <li>○ <u>Safety eyewear</u> – Offer protection from eye injuries. Appropriate eyewear should be worn when there is a potential for flying debris, dust, or other material hitting or getting into the eye. This includes, but not limited to, using hand and power tools, painting, and working next to vegetation. Eyewear should meet or exceed ANSI standard Z87.1.</li> <li>○ <u>Hard hats</u> – Offer protection from head injuries. Hard hats should be worn when there is a possible danger of head injury from impact, falling, or flying objects.</li> <li>○ <u>Ear protection, such as ear plugs and earmuffs</u> – Offer protection from hearing loss. Wear hearing protection when operating power tools and other loud equipment.</li> <li>○ <u>High-visibility retro-reflective clothing and/or vests</u> – Bright, reflective clothing helps ensure people are notice by others when visibility is reduced or in areas where people may be distracted or otherwise not expecting/looking for others to be present. Should be worn by all volunteers, employees, and outdoor recreationalists during hunting seasons. Highly recommended for sawyers and swampers doing saw work; Should also be worn while working on or along roads, parking areas, and other hazardous areas.</li> </ul>
<b>Communication/ Emergency Action Plan</b>	<ul style="list-style-type: none"> <li>○ Address safety concerns and conduct safety talks at the beginning of each workday, including establishing an emergency action plan. At a minimum, the plan shall identify what actions will be taken in the event of an incident, who is first aid and CPR certified, where first aid supplies are located, how to call for emergency assistance, and the location of the nearest hospital and how to get there.</li> <li>○ Establish means of communication. Communications must be clear, concise, and understood by everyone involved.</li> <li>○ Good communication between volunteers should reinforce individual awareness of potential hazards.</li> </ul>
<b>Overexertion</b>	<ul style="list-style-type: none"> <li>○ Be aware of the risks of physical stress associated with physically demanding foot travel and work projects. These include, but are not limited to: <ul style="list-style-type: none"> <li>○ walking long distances</li> <li>○ traversing challenging terrain</li> <li>○ carrying heavy loads/packs</li> <li>○ pushing/pulling loaded wagons/carts to project sites</li> <li>○ walking through deep snow and/or with snowshoes</li> </ul> </li> <li>○ Be aware that any work project will be physically demanding if already fatigued, suffering from overexertion, suffering from effects of heat, etc.</li> <li>○ Pace yourself. Start slowly and pick up the pace gradually. If your heart pounds and leaves you gasping for breath, STOP all activity, get into a cool area (or at least in shade), and rest, especially if you become lightheaded, confused, weak, or faint.</li> <li>○ Adjust to the environment. You will have greater tolerance for the heat if you limit your physical activity until you become accustomed to the heat.</li> <li>○ On hot/humid days, when completing moderate and heavy outdoor work, and when projects involve the use of machinery, tasks should be assigned to the cooler parts of the day.</li> <li>○ The severity of the effects of environmental heat stress is decreased by reducing the workload, increasing the frequency and/or duration of rest periods, and by introducing measures that will protect from hot environments. Take more frequent rest breaks. When hot, take rest breaks in a cooled or air-conditioned building whenever possible.</li> <li>○ ALL PROJECTS CAN BE COMPLETED ANOTHER TIME. Your safety is most important.</li> </ul>
<b>Site Hazards</b>	<ul style="list-style-type: none"> <li>○ Look up. Look down. Look all around. Inspect the area prior to beginning any project or task to identify any site hazards including, but not limited to overhead hazards, patches of noxious plants, pits/holes, dump sites, meth sites, steep banks.</li> <li>○ Point out the hazard(s) to other volunteers working in the area.</li> <li>○ Flag/fence off hazard and avoid area.</li> </ul>

<b>Slips, Trips, and Falls</b>	<ul style="list-style-type: none"> <li>○ Inspect the area prior to beginning any project or task.</li> <li>○ Remove objects that could impede safe operations.</li> <li>○ Be familiar with walking surfaces.</li> <li>○ Always watch your footing and be aware of wet or frozen surfaces.</li> <li>○ Wear footwear with good traction that matches the site conditions. Change footwear to meet site conditions, and/or use supplemental traction devices such as traction cleats, crampons, etc.</li> </ul>
<b>Rendering First Aid</b>	<ul style="list-style-type: none"> <li>○ Control bleeding kits and emergency first aid kits shall be available at all project sites.</li> <li>○ For seriously injured or ill volunteers needing advanced life support and transport, notify 911, and render first aid until a medical first responder takes over care.</li> <li>○ Notify the NPS volunteer program manager as soon as the injured party is safe. Complete the paperwork provided in the accident reporting kit.</li> </ul>
<b>Tick Bite Prevention and Treatment</b>	<ul style="list-style-type: none"> <li>○ Spray clothing, exposed skin, and ankles with insect repellent as a barrier.</li> <li>○ Wear light colored clothing that fits tightly at the wrists, ankles, and waist. Cover trouser legs with high socks or boots.</li> <li>○ Avoid grassy areas if possible.</li> <li>○ Search clothing and the body on a regular basis, especially hair and clothing; Ticks generally do not attach for the first couple of hours.</li> <li>○ If a tick becomes attached, pull it by grasping it as close as possible to the point of attachment and pull straight out with gentle, consistent pressure. Wash skin with soap and water. Then cleanse with rubbing alcohol. Place the tick in an empty container for later identification should you have a reaction. Record dates of exposure and removal.</li> <li>○ Do not try to remove the tick by burning it with a match or covering it with chemical agents.</li> <li>○ If you cannot remove the tick, or the head detaches, seek prompt medical help.</li> <li>○ Watch for warning signs of illness: a large red spot on the bite area, fever, chills, headache, joint and muscle ache, significant fatigue, and facial paralysis are reactions that may appear within two weeks of the bite. Symptoms specific to Lyme disease include confusion, short-term memory loss, and disorientation.</li> <li>○ Report all tick bites to the NPS volunteer program manager.</li> </ul>
<b>Mosquito Bite Prevention and Treatment</b>	<ul style="list-style-type: none"> <li>○ Avoid heavy scents.</li> <li>○ Wear long sleeves and pants. Mosquito head nets may also be valuable in some instances.</li> <li>○ Use insect repellents.</li> <li>○ Avoid scratching.</li> </ul>
<b>Bee/Wasp Sting Prevention and Treatment</b>	<ul style="list-style-type: none"> <li>○ Be alert to bees and hives. Watch for insects traveling in and out of one location.</li> <li>○ If you or anyone on the team is known to have allergic reactions to bee stings, tell a competent person and the rest of the crew. Ensure anyone allergic to bee stings always carries emergency medication with them, and others know where it is located.</li> <li>○ If you are stung, applying a cold pack may bring relief.</li> <li>○ If a stinger is left behind, scrape it off the skin. Do not use tweezers as this squeezes the venom sack, worsening the injury.</li> <li>○ If the victim develops hives, asthmatic breathing, tissue swelling, or a drop in blood pressure, seek medical help immediately.</li> <li>○ Watch for respiratory problems.</li> </ul>
<b>Sun/Heat Exposure</b>	<ul style="list-style-type: none"> <li>○ Check the forecast. Cancel or postpone plans/projects in the event of extreme weather or temperatures.</li> <li>○ <u>Sunburn</u></li> <li>○ Apply sunscreen (SPF 15 or higher) when exposed to sun and reapply at least every two hours.</li> <li>○ Wear long sleeve shirts, long pants, and appropriate headwear to protect skin.</li> </ul>



	<p><u>Dehydration</u></p> <ul style="list-style-type: none"> <li>○ Wear loose fitting clothing, preferably closely woven fabrics of light colors.</li> <li>○ Maintain adequate water intake by drinking water periodically in small amounts throughout the day (about a cup of cool water every twenty minutes). Some over hydration is strongly recommended while continuing to eat throughout the day.</li> <li>○ Increase the amount of cool water and appropriate cool drinks (fruit juices and/or sports drinks) to replace sweat loss and to avoid dehydration.</li> <li>○ Avoid coffee and tea which contribute to dehydration. Sugary drinks such as soda should be avoided.</li> <li>○ Carry more water than you think you will need when doing field work. The amount of water needed during a workday may vary depending on duration in the field, tasks at hand, and weather.</li> </ul> <p><u>Long-term heat exposure</u></p> <ul style="list-style-type: none"> <li>○ Remain aware of the four basic factors that determine the degree of heat stress: air temperature, humidity, air movement, and heat radiation relative to the surrounding work environment.</li> <li>○ Know the signs and symptoms of heat exhaustion, heat cramps, and heat stroke. Heat stroke is a true medical emergency requiring immediate emergency response action.</li> </ul>
<p><b>Cold Exposure, Windchill, &amp; Snowy/Icy Conditions</b></p>	<ul style="list-style-type: none"> <li>○ Check the forecast. Cancel or postpone plans/projects in the event of extreme weather or temperatures.</li> <li>○ Be alert to changes in weather while outside.</li> <li>○ Wear the appropriate clothing and carry extra warm clothes.</li> <li>○ Stay well hydrated and eat high calorie foods to help maintain body heat.</li> <li>○ Watch out for ice. Wear traction devices to avoid slipping in icy conditions.</li> <li>○ Try not to sweat or become too tired.</li> <li>○ Avoid bodies of water or becoming wet.</li> <li>○ <u>Carefully watch for signs of cold-weather health problems, like hypothermia and frostbite.</u></li> </ul>
<p><b>Lightning</b></p>	<ul style="list-style-type: none"> <li>○ Although most common in the summer, thunder and lightning can occur anytime.</li> <li>○ Check your local weather and plan field time accordingly to avoid storms.</li> <li>○ If you can see lightning, seek shelter immediately. If you can hear thunder stop all field work and reach safety before the storm hits. Use "30-30 Rule": If time between strike and thunder is less than 30 seconds, <b>SEEK SHELTER.</b></li> <li>○ If caught in a storm away from your vehicle, try to find some form of enclosed building or shelter. <b>DO NOT</b> seek shelter under large trees or in open areas. Seek shelter in low lying areas such as a ditch. Avoid high elevations, open areas, tall objects, single trees, and falling tree hazards. Avoid wet ground and water sources. Sit on pack. Pile tools together and stay clear. (When in groups, spread out at least 15 feet apart.)</li> <li>○ When seeking shelter in a building, make sure all windows are closed.</li> <li>○ If caught in a storm near a vehicle, return to the vehicle and stay inside while the storm is active. Park the vehicle in a low area away from trees.</li> <li>○ <b>Allow 30 minutes after last thunder before leaving shelter.</b></li> </ul>
<p><b>Wildlife Encounters</b></p>	<ul style="list-style-type: none"> <li>○ Know the wildlife in your area, where they may be, what they may be doing each season, and when they are most active. Avoid places where predators are likely to be, such as berry patches and near dead animals. Know that all wild animals are unpredictable.</li> <li>○ Stay alert to your surroundings. Avoid startling a predator; Where sight distance is limited or flowing water is muffling sounds, make noise by singing or clapping hands. Be especially alert if hiking around dusk or dawn.</li> </ul>

	<p><u><i>Black bear encounters</i></u></p> <ul style="list-style-type: none"> <li>○ DO NOT RUN! This may only instigate the bear’s instinct to chase a moving target. Food, like deer or small animals, run away. If you run, you look more like food to the bear.</li> <li>○ Stay calm. If you see a bear and it hasn't seen you, calmly leave the area. As you move away, talk aloud to let the bear discover your presence.</li> <li>○ Back away VERY SLOWLY if the terrain allows. Bears rarely attack people unless they feel threatened or provoked.</li> <li>○ Be BIG! Place your arms over your head, lift backpacks over your head, or open your jacket wide.</li> <li>○ Don’t turn your back. You should be aware of what the bear is doing.</li> <li>○ Don't make eye contact. Instead, look at the animal’s front feet. You will then always know where the bear is standing and what direction it is moving.</li> <li>○ Small children: Put them behind you or directly in front of you. This makes them look instantly larger. Teach children to get next to you immediately if you encounter a bear while hiking/working. NEVER let children out of your sight. Children are small enough that they may be identified as prey for a bear or other predator. Make sure your children know what to do if they see a bear.</li> <li>○ Speak softly. This may reassure the bear that no harm is meant to it. Try not to show fear.</li> <li>○ If attacked, fight back. Use anything you have close to you such as rocks, sticks, binoculars, walking sticks, and your fists.</li> </ul>
<p><b>Encounters with Illegal Activity</b></p>	<ul style="list-style-type: none"> <li>○ Be alert. Watch for threatening behavior from others or signs of illegal activity in an area such as dump sites, clandestine grow sites, etc.</li> <li>○ If you see something suspicious, gather as much information as you can without putting yourself in harm’s way. Retreat to a safe location immediately, write down the details that you can remember, and call 911.</li> <li>○ If you are at all uncomfortable with a situation, turn around and leave the scene immediately- abandon your equipment if necessary.</li> <li>○ Volunteers shall not attempt to enforce laws or policies, investigate suspicious activity, prevent damage to land or resources, or otherwise take action to confront unknown individuals engaging in inappropriate activities. This is outside of the scope of volunteer service. Volunteers may provide information and attempt to educate others to protect people or resources, but take no action beyond this. Do not aggravate the situation by arguing with others or trying to prevent them from continuing what they are doing. Any further action shall be limited to calling 911 and retreating to a safe location as the situation warrants.</li> <li>○ Follow up with local law enforcement, NPS, and NTCA staff to report the incident.</li> </ul>

## Tasks/Procedures & Hazards

Task/Procedure & Required PPE	Potential Hazards	Recommended Actions or Procedures
<p><b>Walking to/from and working around project site</b></p> <p><b>PPE:</b></p> <ul style="list-style-type: none"> <li>○ Sturdy work boots or trail shoes</li> </ul>	<p>Slips, trips, and falls; Twisted ankles and knees; Poor footing</p> <hr/> <p>Struck by tools while walking</p>	<ul style="list-style-type: none"> <li>○ Always watch your footing and be attentive to trip hazards.</li> <li>○ Don’t be preoccupied while walking.</li> <li>○ Plan your day so you don’t have to rush over uneven terrain.</li> <li>○ Inspect the area prior to beginning any operation.</li> <li>○ Remove objects that could impede safe operations.</li> <li>○ Be familiar with walking surfaces.</li> <li>○ Maintain safe distance/spacing while walking.</li> <li>○ Use tool guards, if available.</li> </ul>

<ul style="list-style-type: none"> <li>○ Eye protection</li> </ul>		<ul style="list-style-type: none"> <li>○ Carry tool at your side below the waist, parallel to ground, gripped at balance point behind tool head, with head forward and with sharp edge down &amp; on down-slope side.</li> <li>○ Do not carry tools on your shoulders or across your body.</li> </ul>
<p><b>Litter collection</b></p> <p><b>PPE:</b></p> <ul style="list-style-type: none"> <li>○ Leather and nitrile gloves</li> <li>○ Sturdy work boots or trail shoes</li> <li>○ Pants</li> <li>○ High-visibility reflective vest</li> </ul>	<ul style="list-style-type: none"> <li>○ Slips, trips, and falls</li> <li>○ Cuts and scraps</li> <li>○ Straining back, arms, or other body parts</li> <li>○ Contact with bodily fluids</li> <li>○ Contact with hazardous materials</li> </ul>	<ul style="list-style-type: none"> <li>○ Be aware of surroundings and potential slipping, tripping, and falling hazards.</li> <li>○ Wear leather and nitrile gloves.</li> <li>○ Bend at the knees when lifting. Use teamwork when carrying heaving items.</li> <li>○ Do not overfill trash bags.</li> <li>○ Use long-handled tools to move objects; Don't place hands or feet where you cannot see.</li> <li>○ Do not place any needles directly into trash bags. Use caution when putting needles and other sharp objects in a Sharps container.</li> </ul>
	<ul style="list-style-type: none"> <li>○ Feet or legs wedged between debris in dump pile; Stepping on hidden sharp objects</li> </ul>	<ul style="list-style-type: none"> <li>○ Work from outside of dump site toward the center.</li> <li>○ Keep feet on solid ground</li> <li>○ Wear PPE.</li> </ul>
	<ul style="list-style-type: none"> <li>○ Exposure to hazards associated with marijuana plantations, active or abandoned meth labs, etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Be familiar with the characteristics of meth labs/dump sites. Do not approach any suspected meth site: immediately evacuate all personnel from the site following the route you came in on and call 911.</li> <li>○ Be observant for things that are suspicious or out of place (trip wire strung across path, irrigation hose lays, evidence of fertilizer activity/trash, strong chemical odors, dump sites that include items such as propane tanks, acetone, shredded lithium batteries, lye/drain cleaner, coffee filters, cold medicine packages, etc.</li> <li>○ Immediately leave the area and call 911, then notify NPS and NCTA.</li> </ul>
	<ul style="list-style-type: none"> <li>○ Vehicle traffic along the roadside and parking areas</li> </ul>	<ul style="list-style-type: none"> <li>○ Wear a high visibility safety vest for all work along any roadway or parking areas.</li> <li>○ Face oncoming traffic.</li> <li>○ Look both ways before crossing the road. Use crosswalk where available. Wait for traffic to clear before crossing.</li> </ul>
<p><b>Operating a motor vehicle</b></p>	<ul style="list-style-type: none"> <li>○ Exposure to possible vehicle deficiencies, or vehicle not in proper working order</li> </ul>	<ul style="list-style-type: none"> <li>○ Conduct a safety walkaround of vehicle to inspect tire inflation, discover fluid leaks, ensure gas and oil levels, and adjust mirrors.</li> <li>○ Familiarize yourself with vehicle controls if you have not operated that vehicle before.</li> </ul>
	<ul style="list-style-type: none"> <li>○ Potential motor vehicle accidents</li> </ul>	<ul style="list-style-type: none"> <li>○ All persons operating a motor vehicle must be licensed and legal to do so.</li> <li>○ Never operate a vehicle under the influence of alcohol, drugs, or medication. Follow warnings on prescription medicine labels regarding the ability to drive.</li> <li>○ Do not attempt to drive if improperly rested.</li> <li>○ Always wear seat belt and shoulder harness.</li> <li>○ Cell phone use is prohibited while driving.</li> <li>○ Obey the speed limit.</li> <li>○ Always signal turns and lane changes.</li> </ul>

		<ul style="list-style-type: none"> <li>○ Maintain proper spacing and following distances from other vehicles.</li> <li>○ Stop for rest breaks as necessary.</li> <li>○ Secure loose objects inside the vehicle that may strike/injure you or passengers during emergency stopping or maneuvering.</li> <li>○ Be alert to wildlife crossing roadway, particularly at dawn, dusk, after nightfall, and periods of increased animal movements at any time of the day (i.e. hunting and mating seasons).</li> <li>○ Do not drive in adverse weather conditions if trip can be delayed.</li> </ul>
<p><b>Trailer</b></p> <p><b>PPE:</b></p> <ul style="list-style-type: none"> <li>○ Leather gloves</li> <li>○ Sturdy work boots or trail shoes</li> </ul>	<p>Vehicle and equipment failure</p>	<ul style="list-style-type: none"> <li>○ Ensure loads do not exceed trailer rating.</li> <li>○ Ensure loaded trailer does not exceed towing/braking rating of the vehicle used to tow the trailer.</li> <li>○ Proper tire pressure should be maintained on towing vehicle and trailer. (Recommended PSI located on side wall of tire.)</li> <li>○ Always inspect vehicle tires for any abnormal wear and tear prior to each use.</li> <li>○ Hitch and electric light hookup of towing vehicle should be maintained and kept clean. Inspect prior to each use.</li> <li>○ Tow vehicle must have a secure place for the chains to be attached.</li> <li>○ Inspect trailer prior to each use. Check welds on trailers for cracks, trailer safety triangle should be visible when ramp is in closed/up position, trailer license plate should be properly attached, and tires inspected for any abnormal wear and tear prior to each use.</li> <li>○ Coupler, spring coupler, tongue jack, and electric light hookup should be maintained and kept clean and lubricated.</li> <li>○ Ensure that bearings are inspected and greased as needed.</li> <li>○ Spare tire(s) for both the trailer and towing vehicle and necessary tools for changing tires (to include adequate jacks) must be available when towing trailers.</li> </ul>
	<p>Injuries when connecting/disconnecting the trailer to the tow vehicle: pinching fingers, crushing toes, back strain, carbon monoxide inhalation</p>	<ul style="list-style-type: none"> <li>○ Ensure that the tongue of the trailer is higher than the ball on the truck before backing the truck to the trailer.</li> <li>○ Ensure that towing vehicle is not running. Minimize exposure to carbon monoxide.</li> <li>○ Trailer jack should always be in locked position, whether in horizontal position for towing or in vertical position for raising and lowering trailer.</li> <li>○ Be aware of your/others' hand placement while lowering the coupler to the hitch ball.</li> <li>○ Wear gloves, work boots, and eye protection to minimize potential for severe injury.</li> <li>○ To avoid back strain, do not lift trailer. Use attached jack to raise and lower the trailer coupler onto the hitch ball. Never use fingers to guide hitch ball into coupler. Verify that the ball is the proper size for the coupler.</li> <li>○ Ensure that the spring coupler is locked in down position and that a coupler lock is secured in place.</li> <li>○ Attach safety chains properly to hitch rings. Cross the chains beneath the coupler- right chain to left hitch ring and left chain to right hitch ring. In the event of</li> </ul>

	<p>separation, the cross over may catch the tongue and prevent serious accident and trailer damage.</p> <ul style="list-style-type: none"> <li>○ Make sure the pin securing the ball mount to the receiver is in place.</li> <li>○ Connect light plugs and make sure that all lights (brake and turn signals) are in working condition on trailer.</li> <li>○ Avoid connecting the trailer in low light conditions. If necessary, wear a headlamp and get a second person to assist and do an inspection.</li> </ul>
Personal injury and back strain when loading and unloading equipment	<ul style="list-style-type: none"> <li>○ Minimize the angle of ramp(s) as much as possible. Trailer should be on a level surface when loading and unloading equipment.</li> <li>○ Ask for assistance if/when needed.</li> <li>○ Ensure that the equipment is securely attached to the appropriate vehicle.</li> <li>○ Before loading, check that the truck is in park and brakes are engaged on the truck.</li> <li>○ Ensure proper loading on the trailer: front to back and left to right per the manufactures trailer manual.</li> <li>○ Avoid attempting to load in low light conditions.</li> </ul>
Equipment weight shifting while traveling and tie down straps breaking or malfunctioning	<ul style="list-style-type: none"> <li>○ Inspect ratchet straps for wear and tear, fraying or cuts, and replace as needed. Do not use damaged straps as damaged straps may not hold during an emergency.</li> <li>○ The sum of the working load limits from all tie downs must be at least 50% of the weight of the cargo. (Minimum strap requirement recommended.)</li> <li>○ Always carry extra ratchet straps.</li> <li>○ Ensure that all ratchet straps are tight and locked down securely.</li> <li>○ Tie up any excess ratchet strap. (If an end of the strap should be run over by the tire of the trailer while in motion, it may result in a large jolt of the trailer, loosening of other straps or potential loss of the load).</li> <li>○ Items other than flat loads (boards, panels, etc) must be secured at four points of contact: front, rear, right, and left.</li> <li>○ Heavier loads may require chains and binders/tightening system.</li> </ul>
Injury to people in path, hitting objects, and jackknifing while backing	<ul style="list-style-type: none"> <li>○ Physically inspect the backing path, identifying any potential obstacles, and ensure a safe route.</li> <li>○ Use a spotter when available to help guide you and increase safety awareness while backing.</li> <li>○ Align vehicle and trailer prior to backing. It is easier to back up a trailer in a straight line.</li> <li>○ Avoid making sharp turns.</li> <li>○ If you must back up the trailer at an angle, position the trailer to be backing up to the left. (Due to the position of the driver in the towing vehicle, there is better visibility on trailer if it is backing to the drivers' side.)</li> <li>○ Practice with empty trailer before towing with a load.</li> </ul>

Please acknowledge that you have reviewed this **PERSONAL SAFETY** hazard analysis and understand the hazards and required precautionary actions on the Volunteer Service Agreement. Please notify the volunteer program manager if you are unable to follow the requirements of this hazard analysis.

**National Park Service  
North Country National Scenic Trail  
Job Hazard Analysis**

<b>1. Work Project/Activity</b> <i>CHAINSAW OPERATIONS*</i>	<b>2. Location</b> <i>North Country NST</i>	<b>3. Originator</b> <i>Nicole Loiseau</i>	<b>4. Job Title</b> <i>Volunteer Program Manager</i>
<b>5. Name of Reviewer</b> <i>Chris Loudenslager</i>	<b>6. Job Title</b> <i>Superintendent</i>	<b>7. Date Prepared/Revised</b> <i>4/28/2021</i>	<b>8. Number of Pages in this JHA</b> <i>3</i>

*\*This JHA is intended for saw operators and swampers.*

<b>TASKS/PROCEDURES</b>	<b>HAZARDS</b>	<b>ABATEMENT ACTIONS</b>
<b>General Chainsaw Operations</b>	Injury due to lack of training	<ul style="list-style-type: none"> <li>○ All operators must be trained, evaluated, and certified in accordance with either National Park Service or US Forest Service chainsaw policy.</li> <li>○ All saw operators must complete Trail Safe! or attend Operational Leadership.</li> <li>○ All saw operators must be trained and certified in first aid and CPR.</li> </ul>
	Delayed/no medical treatment in the event of an emergency	<ul style="list-style-type: none"> <li>○ Saw operations must have reliable primary and alternate means of emergency communications to contact 9-1-1 and/or other critical assistance at all times.</li> <li>○ All saw operators must work with at least one other person who is first aid and CPR certified.</li> <li>○ First aid station adequately equipped for the type of work and size of crew must be within 100 feet of chainsaw operations.</li> </ul>
<b>Pre-Operation Briefing with Tailgate</b>	Accident facilitated by unidentified hazards or poor communication	<ul style="list-style-type: none"> <li>○ Discuss operational plan, site safety plan, and emergency action plan before starting work.</li> <li>○ Identify roles of each person involved in operation.</li> <li>○ Review JHAs associated with the work to be performed.</li> <li>○ Identify and discuss local conditions, specialized equipment that may be used for the project, potential hazards, and how will work be conducted safely given these factors.</li> </ul>
<b>Chainsaw Maintenance</b>  PPE: <ul style="list-style-type: none"> <li>○ Eye Protection</li> <li>○ Leather gloves</li> </ul>	Critical safety feature fails to prevent accident	<ul style="list-style-type: none"> <li>○ Ensure 9 critical safety features of saw are present and functional before starting saw.</li> <li>○ Do not use saw if any are damaged or not functioning properly.</li> </ul>
	Poor saw performance or otherwise unsuitable equipment creates extreme reactive forces	<ul style="list-style-type: none"> <li>○ Ensure chain is sharp and depth gauges are at the proper height.</li> <li>○ Ensure guide bar is straight and chain groove is not flared.</li> <li>○ Ensure chain specs correspond with saw and guide bar.</li> </ul>

<p><b>Fueling</b></p> <p>PPE:</p> <ul style="list-style-type: none"> <li>○ Eye protection</li> <li>○ Gloves</li> <li>○ Long sleeved shirt</li> </ul>	<p>Fire hazards from fuel spills, re-fueling a chainsaw while hot, or defective spark arrestor</p>	<ul style="list-style-type: none"> <li>○ Re-fuel chainsaw in designated fueling area only.</li> <li>○ Re-fuel only when chainsaw is cool.</li> <li>○ Check spark arrestor routinely. Replace if needed.</li> <li>○ Re-fuel at least 10 feet from sources of ignition (fire, smokers, heaters, etc).</li> <li>○ Start chainsaw at least 10 feet from fueling station.</li> </ul>
<p><b>Saw Operations: Operator</b></p> <p>PPE:</p> <ul style="list-style-type: none"> <li>○ Long pants</li> <li>○ Long sleeved shirt</li> <li>○ Sturdy work boots</li> <li>○ Chainsaw Chaps (USFS 6170-4F, ASTM F-1897, or better)</li> <li>○ Hard hat (ANSI Z89.1)</li> <li>○ Eye protection (ANSI Z87.1 or better)</li> <li>○ Hearing protection (plugs, muffs, or both)</li> <li>○ Emergency bandage</li> <li>○ Leather work gloves or specialty sawyer gloves (recommended)</li> </ul>	<p>Injury resulting from chainsaw contacting body part</p>	<ul style="list-style-type: none"> <li>○ Tilt saw away from face and remove gas gap slowly to avoid potential “geyser” of pressurized fuel spray.</li> <li>○ Start chainsaw using leg-lock or ground support method only: “drop start” is prohibited.</li> <li>○ Do not operate saw during periods of poor visibility, or when operator is unable to see tip of bar.</li> <li>○ Operator shall position his/her body out of the pathway of the chainsaw, kickback, and push-back/pull-in reactive forces.</li> <li>○ Operator shall not cut materials with powerhead above shoulder height.</li> <li>○ Operator shall engage the chain brake when taking two or more steps or setting saw down.</li> <li>○ Operator shall have two hands on the chainsaw with thumbs wrapped around handles at all times during operation.</li> <li>○ Space people so the activities of one will not create a hazard for another.</li> </ul>
	<p>Personal injury due to being struck or crushed by limbs, trees, and debris</p>	<ul style="list-style-type: none"> <li>○ Watch for overhead hazards.</li> <li>○ Always operate chainsaw uphill from log.</li> <li>○ Properly assess binds/pressure before cutting.</li> <li>○ Watch kerf, watch for movement, and carefully relieve tension.</li> <li>○ Position body to avoid unexpected release and have a good escape route.</li> </ul>
	<p>Over exertion, physical stress, fatigue, heat exhaustion, and/or heat stroke</p>	<ul style="list-style-type: none"> <li>○ Drink plenty of fluids and stay hydrated.</li> <li>○ Eat an adequate amount and bring snacks and/or a lunch to keep energized.</li> <li>○ Maintain safe and comfortable work pace.</li> <li>○ Plan operations to avoid extreme temperature, humidity, or demanding work when already physically stressed.</li> <li>○ Take frequent breaks.</li> </ul>
	<p>Injury resulting from slips, trips, and falls</p>	<ul style="list-style-type: none"> <li>○ Wear sturdy, high traction work boots.</li> <li>○ Exercise situational awareness.</li> <li>○ Always carry the chainsaw on the downhill side of your body with the chain bar facing to the rear.</li> </ul>
	<p>Hearing loss cause by prolonged noise exposure</p>	<p>Operator shall wear ear plugs, ear muffs, or both at all times while operating chainsaw.</p>

<p><b>Saw Operations: Swamper</b></p> <p>PPE:</p> <ul style="list-style-type: none"> <li>○ Long pants</li> <li>○ Long sleeved shirt</li> <li>○ Sturdy work boots</li> <li>○ Hard hat (ANSI Z89.1)</li> <li>○ Eye protection (ANSI Z87.1 or better)</li> <li>○ Hearing protection (plugs, muffs, or both)</li> <li>○ Leather work gloves or specialty sawyer gloves</li> <li>○ Emergency bandage</li> </ul>	Back injury	<ul style="list-style-type: none"> <li>○ Use proper lifting techniques.</li> <li>○ Use equipment as available to assist.</li> <li>○ Ask for help.</li> </ul>
	Personal injury due to being struck or crushed by limbs, trees, and debris	<ul style="list-style-type: none"> <li>○ Watch for overhead hazards.</li> <li>○ Exercise situational awareness.</li> <li>○ Position body to avoid unexpected release and have a good escape route.</li> </ul>
	Injury resulting from chainsaw contacting body part	Swamper shall maintain 10' or greater distance from a running chainsaw and not approach sawyer unless the saw is off.
	Over exertion, physical stress, fatigue, heat exhaustion, and/or/heat stroke	<ul style="list-style-type: none"> <li>○ Drink plenty of fluids and stay hydrated.</li> <li>○ Eat an adequate amount and bring snacks and/or a lunch to keep energized.</li> <li>○ Maintain safe and comfortable work pace.</li> <li>○ Plan operations to avoid extreme temperature, humidity, or demanding work when already physically stressed.</li> <li>○ Take frequent breaks.</li> </ul>
	Injury resulting from Slips trips and falls	<ul style="list-style-type: none"> <li>○ Wear sturdy, high traction work boots.</li> <li>○ Exercise situational awareness.</li> <li>○ Always carry tools on your down-hill side.</li> </ul>
	Hearing loss	Swamper shall wear ear plugs, ear muffs, or both while working near chainsaws.

Please acknowledge that you have reviewed this **CHAINSAW OPERATIONS** hazard analysis and understand the hazards and required precautionary actions on the Volunteer Service Agreement. Please notify the volunteer program manager if you are unable to follow the requirements of this hazard analysis.



**National Park Service  
North Country National Scenic Trail  
Job Hazard Analysis**

<b>1. Work Project/Activity</b> <i>CROSSCUT SAW OPERATIONS*</i>	<b>2. Location</b> <i>North Country NST</i>	<b>3. Originator</b> <i>Chris Loudenslager</i>	<b>4. Job Title</b> <i>Superintendent</i>
<b>5. Name of Reviewer</b> <i>Chris Loudenslager</i>	<b>6. Job Title</b> <i>Superintendent</i>	<b>7. Date Prepared/Revised</b> <i>5/5/2021</i>	<b>8. Number of Pages in this JHA</b> <i>3</i>

*\*This JHA is intended for crosscut saw operators.*

<b>TASKS/PROCEDURES</b>	<b>HAZARDS</b>	<b>ABATEMENT ACTIONS</b>
<b>General Crosscut Operations</b>  PPE: <ul style="list-style-type: none"> <li>○ Long pants</li> <li>○ Long sleeved shirt</li> <li>○ Sturdy work boots</li> <li>○ Hard hat (ANSI Z89.1)</li> <li>○ Eye protection (ANSI Z87.1 or better)</li> <li>○ Emergency bandage</li> <li>○ Leather work gloves or other cut resistant gloves</li> </ul>	Injury due to lack of training	<b><i>Training requirements for crew leader:</i></b> <ul style="list-style-type: none"> <li>○ All operators must be trained, evaluated, and certified by a Forest Service or National Park Service-approved crosscut saw instructor.</li> <li>○ All saw operators must complete Trail Safe! or attend Operational Leadership.</li> <li>○ All saw operators must be trained and certified in first aid and CPR.</li> <li>○ Operators shall have a safety refresher every three years.</li> </ul> <b><i>Training requirements for crew member:</i></b> One crew member working with the saw operator must be first aid and CPR certified.
	Delayed/no medical treatment in the event of an emergency	<ul style="list-style-type: none"> <li>○ Saw operations must have reliable primary and alternate means of emergency communications to contact 9-1-1 and/or other critical assistance at all times.</li> <li>○ All saw operators must work with at least one other person who is first aid and CPR certified.</li> <li>○ First aid station adequately equipped for the type of work and size of crew must be within 100 feet of crosscut operations.</li> </ul>
	Personal injury due to not wearing PPE	Wear the required personal protective equipment (PPE): <ul style="list-style-type: none"> <li>○ Long pants</li> <li>○ Long sleeved shirt</li> <li>○ Sturdy work boots</li> <li>○ Hard hat (ANSI Z89.1)</li> <li>○ Eye protection (ANSI Z87.1 or better)</li> <li>○ Emergency bandage</li> <li>○ Leather work gloves or other cut resistant gloves</li> </ul>
<b>Pre-Operation Briefing with Tailgate</b>	Accident facilitated by unidentified hazards or poor communication	<ul style="list-style-type: none"> <li>○ Discuss operational plan, site safety plan, and emergency action plan before starting work.</li> <li>○ Identify roles of each person involved in operation.</li> </ul>

		<ul style="list-style-type: none"> <li>○ Review JHAs associated with the work to be performed.</li> <li>○ Identify and discuss local conditions, specialized equipment that may be used for the project, potential hazards, and how will work be conducted safely given these factors.</li> </ul>
<b>Handling Saws and Axes</b>	Cuts and abrasions	<ul style="list-style-type: none"> <li>○ Wear PPE.</li> <li>○ Sheaths provide protection to self and others while protecting these valuable tools.</li> <li>○ Saws should be always sheathed, except when actually being used or in storage.</li> </ul>
<b>Transporting Saws and Axes: By Vehicle</b>	<ul style="list-style-type: none"> <li>○ Cuts and abrasions</li> <li>○ Property damage</li> </ul>	<ul style="list-style-type: none"> <li>○ Sheath should always be in place.</li> <li>○ Use care, position crosscut saw upright, to protect saw and other tools and property.</li> </ul>
<b>Transporting Saws and Axes: By Hiking with Saw Carried on Shoulder</b>	Cuts and abrasions	<ul style="list-style-type: none"> <li>○ Wear PPE.</li> <li>○ Sheaths should always be in place.</li> <li>○ Person carrying the saw should be the last person in line.</li> <li>○ 2-person saws should have the rear handle removed.</li> <li>○ The saw should be carried on the shoulder with the teeth facing outward.</li> <li>○ Carry the saw or axe on the downhill side, so that it can be thrown clear in case of a fall.</li> <li>○ When crossing streams or other poor footing situation, saws and axes should be carried as low as possible.</li> </ul>
<b>Transporting Saws and Axes: By Hiking with Saw Carried with Sling or Carrying Strap</b>	Cuts and abrasions	<ul style="list-style-type: none"> <li>○ Wear PPE.</li> <li>○ Sheath should always be in place.</li> <li>○ Carrying strap rests on shoulder. Gloved hands stabilize saw.</li> <li>○ When crossing streams or other poor footing situations carrying strap should rest on the outside of shoulder so that saw can be thrown clear in case of a fall.</li> </ul>
<b>Limbing &amp; Bucking</b>  PPE: <ul style="list-style-type: none"> <li>○ Long pants</li> <li>○ Long sleeved shirt</li> <li>○ Sturdy work boots</li> <li>○ Hard hat (ANSI Z89.1)</li> <li>○ Eye protection (ANSI Z87.1 or better)</li> <li>○ Emergency bandage</li> <li>○ Leather work gloves or other cut resistant gloves</li> </ul>	Personal injury	<p><b><u>Size up</u></b> Consider lean, compression, tension, limbs, soundness of tree, diameter, spring poles, overhead hazards, escape routes, “safety circle”</p> <p><b><u>Escape routes</u></b> All limbing, bucking, and felling operations require clear escape routes.</p> <p><b><u>Footing</u></b> Ensure firm stable footing</p> <p><b><u>Overhead hazards</u></b></p> <ul style="list-style-type: none"> <li>○ Whether bucking, limbing or felling look up and around often.</li> <li>○ Use hard hats if overhead hazards are present.</li> </ul>

		<p><b><u>Anticipate tension</u></b></p> <ul style="list-style-type: none"> <li>○ Anticipate log tension and compression. Plan mitigation.</li> <li>○ Use wedges, pie cuts, and/or levers.</li> <li>○ Initiate cut slowly to observe bind.</li> </ul>
	Injury from rolling logs	<ul style="list-style-type: none"> <li>○ Use caution when cutting limbs supporting log off the ground.</li> <li>○ Do not saw from the downhill side without providing for the safety of the downhill operator.</li> <li>○ On steep ground, prevent bucked sections from rolling or sliding.</li> </ul>
	Back injury or muscle strain	<ul style="list-style-type: none"> <li>○ Cut logs to a manageable size; Cut logs small enough to be safely moved.</li> <li>○ Use levers, skids, or come-a-longs to move large logs.</li> </ul>
<b>Managing Human Factors</b>	<ul style="list-style-type: none"> <li>○ Personal injury</li> <li>○ Fatigue</li> </ul>	<ul style="list-style-type: none"> <li>○ Effective crew communication is very important to safe and effective crosscut saw operations. Everyone should know the plan before cutting.</li> <li>○ Refuse a job if you do not feel comfortable that you can do it safely.</li> <li>○ Manage fatigue: rotate work assignments, and take breaks as needed.</li> <li>○ Drink plenty of water to avoid dehydration.</li> <li>○ Provide for the safety of other trail users.</li> </ul>
<b>Emergency Evacuation Plan</b>	Managing series injury and illness	<ul style="list-style-type: none"> <li>○ Crew members must have effective means of communications.</li> <li>○ First aid kits are carried with each crew in the field and on vehicles.</li> <li>○ When serious injuries/illnesses occur, notify 9-1-1 and initiate emergency action plan.</li> <li>○ Crew members are trained in first aid/CPR.</li> </ul>
<b>Felling</b>	Numerous potential hazard	Felling of trees is NOT covered in this JHA.

Please acknowledge that you have reviewed this **CROSSCUT SAW OPERATIONS** hazard analysis and understand the hazards and required precautionary actions on the Volunteer Service Agreement. Please notify the volunteer program manager if you are unable to follow the requirements of this hazard analysis.