



Shenandoah National Park  
3566 Hwy 211 E  
Luray, VA 22835  
540-999-3500



## Volunteer Service Description: Trail Maintainer

Service Details	
<b>Service Type:</b>	Regular/Recurring Position
<b>Service Date(s):</b>	Ongoing
<b>*Service Location:</b>	Shenandoah National Park
<b>*Time Commitment:</b>	During scheduled maintenance duties

Supervision and Support	
<b>Position Supports:</b>	Maintenance / Facilities
<b>*Primary Supervisor:</b>	Nathaniel Phelps
<b>Title:</b>	Supervisory Facility Operation Specialist
<b>Email:</b>	nathaniel_phelps@nps.gov
<b>Phone:</b>	540-999-3500 x3778
<b>Secondary Contact(s):</b>	William (Dave) Jenkins, dave_jenkins@nps.gov, 540-999-3500 x314, Corrina Wendel 540-836-1697

### Main Goals for Position

The purpose of this position is to support the Shenandoah Backcountry and Trails program and to support resource stewardship by assisting park staff with trail maintenance.

### Description of Duties

Volunteer work performed in this discipline will chiefly involve routine trail maintenance and rehabilitation and construction of graded foot and horse trails. These may include ADA accessible trails with special surfaces, trails in high visitor use areas, foot and horse use trails in remote backcountry areas and trails in designated Wilderness areas. Position duties include:

- Repairing and maintaining erosion control structures, retaining walls, and tread surface
- Re-painting trail blazes
- Park boundary line maintenance
- Removal of vegetation growth, fallen and loose rock, and tree obstructions from trails
- Litter removal
- Coordination with Park Backcountry and Trails staff in an effort to prioritize trail coverage, accomplish any necessary work, and assist with special projects
- Debrief of work with Park staff and file Patrol Reports in a timely manner
- Providing general assistance to backcountry visitors and work with Park Law Enforcement to report suspicious or illegal behavior and emergencies

### Required Qualifications

\*Prior training or certifications are required.

☐ Yes ☒ No

Minimum age requirement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
*Health or physical condition requirement? ( <i>i.e. medical clearance required</i> )	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**Explain, if necessary, any of the above:**

Volunteers should have knowledge of basic outdoor skills, be able to work cooperatively in a team environment, possess a desire to learn new skills, and be able to effectively communicate with both Park staff and visitors.

### Working Environment and Safety Considerations

Volunteers may encounter various environmental hazards while working, including:

- All types of weather from hot and humid to wet, cold, and stormy
- Uneven terrain including hills, slopes, grades, and wetlands—in both forested and open areas
- Slipping and tripping hazards (rocks and tree roots, mossy stones or logs, mud, water, and loose gravel)
- Overhead hazards (widow makers)
- Exposure to long periods of sunlight, wind, storms, dust/dirt, biting and stinging insects, venomous snakes, poison ivy, bears, nuisance wildlife, biological contaminants, chemicals, motor noise, exhaust, or gas/paint fumes

Volunteers will be appropriately matched with the work according their personal interests and abilities. Physical demands involved with Trail Maintenance range from light exertion to arduous exertion depending upon the task. In general, trail maintenance often involves:

- Frequent stooping, lifting, reaching, bending, carrying, and repetitive motion
- Walking distances of several miles per day, often while carrying tools or other equipment
- Lifting or moving objects weighing more than 50 pounds

Job Hazard Analysis (JHAs) will be made available by the Work Leader or VIP Coordinator to each volunteer for the specific work being performed, and will be covered during “tailgate” safety briefings. The following Park JHAs apply to this work:

- Backcountry Travel & Work (Parkwide)
- Working Around biting and Stinging Insects (Parkwide)
- Ticks (Parkwide)
- Heat Stress
- Fire Hand Tool Maintenance (RAD)
- Vegetation Maintenance with Hand Tools (NCR)
- Blowdown Removal with Cross-Cut Saws
- Power Weeder Operation
- Chainsaw Safety & Operation
- Power Drill and Quarrying Rock Operation
- Highline & Rigging Operations

Additional safety considerations should be discussed as appropriate given the local work environment, season, and geographic location. Examples include:

- Proper hydration
- Heat disorders
- Hypothermia
- Insect/animal bites & stings
- Lyme disease awareness

Volunteers are required by *Director's Order #50B* to report to their NPS supervisor (orally or in writing), as soon as possible, all job-related accidents, illness, injuries, or near-miss incidents they witness, or in which they are involved.

#### Government Property and Equipment

*Personal Protective Equipment (PPE) will be provided to the volunteer.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
The volunteer will use a government vehicle (GOV) for volunteer duties.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
The volunteer will use government equipment for volunteer duties.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Explain, if necessary, any of the above:

Individual and team safety is the top priority. Volunteers must adhere to the requisite Job Hazard Analysis, including wearing appropriate PPE and clothing depending on the work being performed (ex. eye and ear protection, leather gloves, long pants, closed toed shoes, hard hat, etc.). PATC volunteers may request PPE from the Park or use items provided by PATC or themselves.

#### Personal Property and Equipment

*The volunteer will use a personal vehicle (POV) for volunteer duties.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
*The volunteer will use personal equipment for volunteer duties.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The volunteer must supply parts of the volunteer uniform for this position.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Explain, if necessary, any of the above:

Volunteer will supply long pants, closed toed shoes, and any necessary outerwear depending on weather. Volunteers should wear a hat or shirt which identifies them as a PATC or Shenandoah Volunteer

#### Internal Controls

<b>Position:</b> Position requires a background investigation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Money:</b> Will be handling permits, passes, fees or government money.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Access:</b> Will have unsupervised access to government buildings.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Computers:</b> Will have access to the DOI Network/government computer.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### Explain, if necessary, any of the above:

#### Volunteer Benefits

*Reimbursements approved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
*Housing provided?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

*Trainings provided?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Travel approved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Uniform provided?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Explain, if necessary, any of the above:**

- The Park will provide lodging within the Park as requested and as available to facilitate logistical needs to meet program objectives.
- Volunteers must receive proper training on the use of tools. They must also attend, or complete regular, recurring, and ad hoc training identified by NPS supervisor throughout the year.

**Additional Items**

All volunteer work is to be done in accordance with the Trail Maintenance Standards outlined in the Shenandoah National Park 2016 Programmatic Categorical Exclusion. Any work not specifically covered in the Programmatic Categorical Exclusion requires Park approval in writing before work begins.

The following is a list of possible personal protective equipment (PPE) required for position duties. Reference the specific Job Hazard Analysis (JHA) for required PPE on an individual basis.

- Boots – Aggressive Tread, Ankle Support
- Appropriate Field Attire – Long Pants & Clothing Appropriate for Weather
- Gaiters treated with Permethrin
- Nitrile Gloves
- Hard Hat
- Eye Protection or Face Shield
- Hearing Protection – Ear Plugs, Ear Muffs
- Respirator
- Leather Gloves
- Chainsaw Chaps

The following Tools and Equipment are outlined in the JHAs as necessary for safe working conditions or as posing a safety hazard. Tools & Equipment may only be used by individuals with the requisite training and/or certification. Required PPE must also be used during activities.

Backcountry Travel

- Park Radio
- First Aid Kit
- Personal Medications
- Light Source with Extra Batteries
- Map & Compass
- Emergency Space Blanket
- Whistle

Chainsaw Safety & Operation

- Chainsaw, Properly Maintained
- Wedges

- Single Bit Axe
- Chainsaw Wrench
- Chain Files
- Spare Bar Nuts
- Saw Chain, Properly Filed
- Approved Containers for Gas & Bar Oil
- Portable Fire Extinguisher (or Wildland Fire Tools)
- First Aid Kit Equipped for Serious Injury
- Park Radio

#### Power Drill & Quarrying Operation

- Power Drill (Pionjar) & Accessories
- Hammers
- Wedge & Feather Sets
- Mash Hammer
- First Aid Kit Equipped for Serious Injury
- Park Radio

#### Highline & Rigging Operations

- Griphoist Winch & Wire Rope
- 3/8 inch Wire Rope
- Trees or Tripod Towers
- Accessory Hardware
- First Aid Kit Equipped for Serious Injury
- Park Radio

Use of mechanized equipment in the Wilderness is not in keeping with Wilderness character and may not be used unless specifically approved.

Additionally, the following Tools and Equipment used in Trail Maintenance may include one or more of the following, depending upon complexity of the task and training/certification of the volunteer:

- Pulaski
- McLeod
- Pick Mattock
- Shovel
- Lopper
- Hand Pruner
- Pruning Saw
- Bow Saw
- Crosscut Saw
- Pole Pruner/Pole Saw
- Chainsaw
- Wedges
- Single Bit Axe
- Hatchet
- Swing Blade

- Machete
- Weed Whip
- Bush Hook
- Swedish Brush Ax
- Rock Bar
- Wheel Barrow
- Paint Brush

## JOB HAZARD ANALYSIS

<b>Job Task:</b> <b>Working Around Biting and Stinging Insects</b>	<b>Job Hazard Analysis developed and/or reviewed by following employees:</b> Kelly Stiles, Zach Long, Susan Finlay, Bob Davis, Lauren Bentley, Alexandra Ottaviano, Elizabeth Printz, William Imler, Brian Noland, Denise Machado, Katherina Wilkins, MacKenzie Machuga, Danette Perez, Amber Cohen, Ron Cross, Elton Yordy, Carmen Huwe, Christy Pipher, Ruth Taylor, Sarah Derflinger, Mary Davis, Ryan Pettit, Jeremy Stoneberger, Alyssa Aleknas, Alisa Stackowicz, Christi Armentrout, Joanna Leach, Chris Denby, Rhyannon Hayes, Paula Keeter-Britt, Mark Doty, Lori Rankin, Lori Mooney, Ken Wormley, Peter Campbell	
<b>Unit:</b> SHEN – Parkwide		
<b>Required Safety Training for this Task:</b>  - none -	<b>Certifications Required:</b>  - none -	
<b>JHA Completion date:</b> June 6, 2021	<b>Supervisor Signature:</b> /s/Hazel B Rudacille	

REQUIRED EQUIPMENT & TOOLS FOR THE JOB	REQUIRED <u>SAFETY</u> EQUIPMENT
- none -	- none -

POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
<b>1. Bee stings:</b> painful stings, allergic reactions	<ul style="list-style-type: none"> <li>• Be alert to hives in brush, ground holes, or hollow logs. Watch for insects traveling in and out of one location.</li> <li>• If you or anyone you are working with is known to have allergic reactions to bee stings, tell the rest of the crew and your supervisor. Make sure you carry emergency medication with you at all times.</li> <li>• Wear long sleeve shirts and trousers, tuck in shirt. Bright colors and metal objects may attract bees or wasps.</li> <li>• If you are stung, a cold compress may bring relief.</li> <li>• If stinger is left behind, scrape it off of skin. Do not use tweezers as this squeezes the venom sack, worsening the injury.</li> <li>• <b>If the victim develops hives, asthmatic breathing, tissue swelling or a drop in blood pressure, seek medical help immediately.</b></li> </ul>
<b>2. Mosquito bites:</b> skin irritation, encephalitis	<ul style="list-style-type: none"> <li>• Wear long sleeves and trousers.</li> <li>• Avoid heavy scents.</li> <li>• Use insect repellents. Do not apply Permethrin, Permethrin, or greater than 30% DEET directly to skin, only to clothing.</li> <li>• Carry after-bite medication to reduce skin irritation.</li> <li>• Avoid being outdoors at twilight and evening</li> </ul>

**JOB HAZARD ANALYSIS: Backcountry Travel**

<b>Job Task:</b> <b>Backcountry Travel</b>		<b>Job Hazard Analysis Reviewed by the following Employees Performing this Task:</b> Brenda Ritchie, Matt Richardson, Jim Atkinson, Shawn Green
<b>Unit:</b> SHEN – Park-wide		
<b>Required Safety Training for this Task:</b>  - First Aid and CPR Training recommended - OJT for high risk tasks		<b>Reviewers:</b> Division Chiefs, Safety Officer, District Rangers, several supervisors and work leaders
		<b>Certifications Required:</b>  None
<b>JHA Completion Date:</b>  March 2007	<b>Update Review Due:</b>  May 2008	<b>Supervisors Signature:</b>  /s/

**OSHA Standards:** 29 CFR 1910.95      Occupational Noise  
    1910.133      Eye & Face Protection  
    1910.135      Head Protection  
    1910.136      Foot Protection  
    1910.138      Hand Protection

REQUIRED EQUIPMENT & TOOLS FOR JOB	REQUIRED SAFETY EQUIPMENT
<ul style="list-style-type: none"> <li>- Park radio</li> <li>- First Aid kit carried by individual or crew</li> <li>- Personal medications, such as Epi Pen, inhaler, etc.</li> <li>- Vehicle safety equipment: Refer to JHA: Light Vehicle Operation</li> <li>- Optional safety equipment:               <ul style="list-style-type: none"> <li>- Flashlight w/ extra batteries</li> <li>- Map &amp; compass</li> <li>- Emergency space blanket</li> <li>- Whistle as attraction device</li> </ul> </li> </ul>	<p><b>Personal Protective Equipment (PPE):</b></p> <ul style="list-style-type: none"> <li>- Boots – appropriate footwear for task; minimum boot height of 6”</li> <li>- Appropriate Field Attire – long pants, and clothing appropriate for expected weather</li> <li>- PPE required for task</li> <li>- Refer to existing park JHAs, such as, Chain Saw Operations, etc.</li> </ul>



TASKS/PROCEDURES	POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
Backcountry Travel	<ul style="list-style-type: none"> <li>• Falling or tripping due to wet areas, poor footing, uneven terrain, snow and ice, loose/rolling rocks and heavy pack.</li> <li>• Terrain &amp; environmental hazards associated with work that occurs in mountainous terrain during all seasons.</li> <li>• Inadequate radio communications.</li> <li>• Overdue from backcountry assignment.</li> <li>• Taking on hazardous task.</li> </ul>	<ul style="list-style-type: none"> <li>• In areas with poor footing, slow down and take short steps. Use hiking poles to improve balance.</li> <li>• Plan ahead &amp; identify necessary PPE for your trip (i.e. wear proper footwear; ensure protection from environmental conditions such as precipitation, wind, cold, and heat; anticipate a full day and even a night out).</li> <li>• Be alert to changes in terrain &amp; weather.</li> <li>• Stay in shape. Know &amp; monitor your personal fitness level &amp; that of others in your group.</li> <li>• Adjust plans accordingly. Be flexible.</li> <li>• Carry adequate water.</li> <li>• Carry a First Aid Kit.</li> <li>• If possible, take a coworker when traveling in areas of high risk or when conducting high risk activities.</li> <li>• Communications are a life link. Carry a radio &amp; spare battery (if needed) at all times. Ensure that equipment is working properly; batteries are fully charged, etc. Be aware of radio dead spots in your work area or consult radio coverage maps.</li> <li>• All crew members must travel together or have separate communications</li> <li>• Check in with the Comm Center before entering the backcountry. Notify the Comm Center when you have cleared the backcountry. Check in with Comm Center when taking on a hazardous task (e.g. operating a chain saw alone). Request status check, if needed.</li> </ul>

Vehicle travel on administrative roads	<p>Vehicle accidents resulting in property damage or injury.</p> <p>Vehicle accidents resulting in property damage or injury. (continued)</p>	<ul style="list-style-type: none"><li>• Maintain a slow &amp; safe speed for changing road conditions, such as, loose gravel, rutting, storm damage, poor visibility due to vegetation, fallen trees or rocks, snow &amp; ice, etc.</li><li>• Many admin roads require 4-wheel drive and/or high-clearance vehicles for safe passage. Do not exceed the capacity of your vehicle or driving ability. When in doubt, turn around or back out.</li><li>• Anticipate other users on roads, such as, special use permit vehicles, hikers, horse riders, and wildlife, etc. Be prepared to slow down or stop with little notice.</li><li>• When encountering horse riders, pull off to the side of road and stop, until horses have passed or signaled by rider to proceed.</li><li>• Turn engine off when passed by concession lead horse riders.</li><li>• Use special caution at stream crossings, particularly during and after periods of high water flow. Stop and carefully survey the stream crossing. Do not cross, if unsure of a safe passage.</li><li>• When turning around on narrow roads use a spotter or get out of the vehicle and survey the turn around spot for hazards.</li></ul>
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<b>Unit:</b> SHEN – Parkwide		
<b>Required Safety Training for this Task:</b>  - none -	<b>Certifications Required:</b>  - none -	
<b>JHA Completion date:</b> June 6, 2021	<b>Supervisor Signature:</b> /s/Hazel B Rudacille	

REQUIRED EQUIPMENT & TOOLS FOR THE JOB	REQUIRED <u>SAFETY</u> EQUIPMENT
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<b>JHA Completion Date:</b>  March 2007	<b>Update Review Due:</b>  May 2008	<b>Supervisors Signature:</b>  /s/

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TASKS/PROCEDURES	POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
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Vehicle travel on administrative roads	<p>Vehicle accidents resulting in property damage or injury.</p> <p>Vehicle accidents resulting in property damage or injury. (continued)</p>	<ul style="list-style-type: none"><li>• Maintain a slow &amp; safe speed for changing road conditions, such as, loose gravel, rutting, storm damage, poor visibility due to vegetation, fallen trees or rocks, snow &amp; ice, etc.</li><li>• Many admin roads require 4-wheel drive and/or high-clearance vehicles for safe passage. Do not exceed the capacity of your vehicle or driving ability. When in doubt, turn around or back out.</li><li>• Anticipate other users on roads, such as, special use permit vehicles, hikers, horse riders, and wildlife, etc. Be prepared to slow down or stop with little notice.</li><li>• When encountering horse riders, pull off to the side of road and stop, until horses have passed or signaled by rider to proceed.</li><li>• Turn engine off when passed by concession lead horse riders.</li><li>• Use special caution at stream crossings, particularly during and after periods of high water flow. Stop and carefully survey the stream crossing. Do not cross, if unsure of a safe passage.</li><li>• When turning around on narrow roads use a spotter or get out of the vehicle and survey the turn around spot for hazards.</li></ul>
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<p>Coming in contact with dangerous and/or poisonous animals, insects and plants</p>	<ul style="list-style-type: none"> <li>• Bee stings.</li> <li>• Skin irritation from poisonous plants.</li> <li>• Tick bites. (Refer to: Work in Tick Infested Areas JHA)</li> <li>• Snake bites.</li> <li>• Encounters with dangerous animals, including dogs off leash.</li> <li>• Encounters with poisonous plants, insects, and other environmental hazards.</li> </ul>	<ul style="list-style-type: none"> <li>• Be alert for bees during the summer season. Workers with known allergies should alert your co-workers and take special precautions (e.g. carry Epi Pen, if prescribed).</li> <li>• Workers with known allergies to poison ivy need to take special precautions which may include pre-treating skin prior to work and careful cleansing after exposure.</li> <li>• All work groups working in the backcountry should have a thorough orientation to tick life forms, identification and sign &amp; symptoms of tick-borne diseases.</li> <li>• Use tick avoidance precautions when working in tick infested areas, including tick checks during and after work shift.</li> <li>• Be alert for snakes in thick vegetation and rocky habitats.</li> <li>• Look <b>before</b> putting hands or feet in places out of immediate view.</li> <li>• Keep your distance or make an attempt to create distance between yourself and the animal of concern.</li> <li>• Call for assistance if needed.</li> <li>• Know dangerous and/or poisonous plants, insects, and animals, and then take reasonable precautions to keep yourself safe.</li> <li>• Carry a first aid kit well-stocked for environmental hazards</li> <li>• Get medical help as soon as possible when needed.</li> </ul>
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Working in adverse weather	<ul style="list-style-type: none"> <li>• Caught out in a thunderstorm.</li> </ul>	<ul style="list-style-type: none"> <li>• Schedule outdoor activities accordingly if thunderstorms are likely.</li> <li>• If you see or hear a thunderstorm coming, retreat from high ground and exposed areas. Go inside a building or vehicle, if possible. Do not seek shelter under a rock overhang or trees.</li> </ul>
Working in adverse weather (continued)	<ul style="list-style-type: none"> <li>• Caught out in a thunderstorm. (continued)</li> <li>• Heat and humidity.</li> <li>• Exposure.</li> <li>• Negative impact of long-term sun exposure.</li> <li>• Negative impact of poor air quality.</li> </ul>	<ul style="list-style-type: none"> <li>• You are in danger from lightning if you can hear thunder.</li> <li>• If you can't get inside and if you feel your hair stand on end, lightning is about to strike.</li> <li>• Make yourself the smallest target possible and minimize contact with the ground.</li> <li>• Crouch down on your pack (insulating surface) on the balls of your feet and keep your feet close together.</li> <li>• Place your hands on your knees and lower your head.</li> <li>• Members of a party should stay separated by at least ten feet.</li> <li>• Drink plenty of water. Take extra breaks. Adjust the work routine to minimize exposure to extreme heat and humidity.</li> <li>• Be alert to changes in weather.</li> <li>• Take adequate garments for all possible weather conditions.</li> <li>• Carry an emergency space blanket.</li> <li>• If possible, take a coworker when traveling in extreme mountain weather.</li> <li>• Wear a hat and use sunscreen.</li> <li>• Be prepared to modify work activity on days with unhealthy air quality.</li> </ul>

Backcountry Miscellaneous.	<ul style="list-style-type: none"> <li>• Water borne illnesses.</li> <li>• Hazard Trees.</li> <li>• High water stream crossings.</li> <li>• Power and hand tools.</li> </ul>	<ul style="list-style-type: none"> <li>• Drink water from protected water sources. Treat or filter backcountry water sources.</li> <li>• Look up. Be alert for storm damaged trees with broken limbs or standing dead trees. Do not take extended breaks in an area with hazard trees where you could be the target of falling limbs or trees.</li> <li>• Do not negotiate high water stream crossings alone, if possible.</li> <li>• Be prepared to jettison gear should you lose your balance.</li> <li>• It is safer to wade through high water, rather than rock hop across a stream trying to keep your boots dry.</li> <li>• Consider bringing wading boots and using hiking poles for balance.</li> <li>• Use proper safety gear. Get proper training and instructions on safe use. Refer to park JHAs.</li> </ul>
Backcountry Miscellaneous. (continued)	<ul style="list-style-type: none"> <li>• Heavy lifting.</li> <li>• Solo travel.</li> <li>• Over snow travel.</li> <li>• BC travel at night.</li> <li>• Personal safety and dealing with hostile behavior.</li> </ul>	<ul style="list-style-type: none"> <li>• Use proper form and techniques for lifting. Get assistance with heavy items.</li> <li>• Take extra precautions when traveling solo. Always be aware of you surroundings and possible problems.</li> <li>• Carry a map &amp; compass and know how to use them.</li> <li>• Use supplemental devices on footwear to improve traction and ski poles to improve balance. Receive training for snow and ice travel conditions and/or equipment. Never overestimate your ability.</li> <li>• Anticipate a work shift running into darkness.</li> <li>• Carry a headlamp or flashlight and extra batteries.</li> <li>• Slow down. Maintain awareness of surroundings and hazards.</li> <li>• Maintain situational awareness. Be alert, aware and ready to respond.</li> <li>• The uniform you wear may make you a target for an irate individual.</li> <li>• If you are uncomfortable with the situation, notify Comm Center. Look for an opportunity to end the contact and leave the area. Notify your supervisor at your earliest opportunity. Supervisors should notify district ranger staff ASAP.</li> <li>• Your personal safety is always more important than your job.</li> <li>• Avoid confrontation with an angry person, often they are upset about a personal situation or the government. Remain detached. Do not get angry yourself or become personally involved.</li> <li>• Be respectful of park neighbors.</li> <li>• Be aware of unique parking issues around the park boundary.</li> </ul>

Emergency Evacuation Plan	Serious injury and illness.	<ul style="list-style-type: none"><li>• Minor injuries are treated in the field.</li><li>• When serious injuries/illnesses occur, notify Comm Center ASAP. A treatment and evacuation plan is initiated.</li><li>• Field crews are trained in first aid, CPR and as litter team members when training is available.</li></ul>
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**JOB HAZARD ANALYSIS – Vegetation Maintenance with Hand Tools**

<b>Job Task:</b> <b>Vegetation Maintenance with Hand Tools</b>		<b>Job Hazard Analysis Developed and Reviewed by:</b> <b>Employees developing this JHA: (Sept. 2003)</b> Don Harvey and North District Trail Crew, Shawn Green
<b>Unit:</b> SHEN – NCR Branch of BC Mgt. & Trails		<b>Employees updating this JHA:</b> Don Harvey, Shawn Green  <b>Reviewers:</b> Roger Dovel, CT Campbell, Charles Newton
<b>Required Safety Training for this Task:</b> - OTJ training & proficiency review by supervisor. - At least one and as many crew members as possible are trained in First Aid/CPR. - Accident Reporting & Near Misses		<b>Certifications Required:</b>  - None
<b>JHA Completion Date: 2003</b> <b>Updated: February 2008</b>	<b>Update Review Due:</b>  <b>February 2010</b>	<b>Supervisor, Division Chief or Superintendent Signature:</b>  /s/ Steve Bair

**OSHA Standards:** 29 CFR

- 1910.133     Eye & Face Protection
- 1910.137     Foot Protection
- 1910.138     Hand Protection

REQUIRED EQUIPMENT & TOOLS FOR JOB	REQUIRED SAFETY EQUIPMENT
<ul style="list-style-type: none"> <li>- A variety of handtools including: swing blade, weed whip, machete, bush hook, Swedish brush axe, loppers, pruning saws</li> <li>- First aid kit carried by crew</li> <li>- Park radio</li> </ul>	<b>Personal Protective Equipment (PPE):</b> <ul style="list-style-type: none"> <li>- Hand Protection: leather gloves, consider anti-vibration gloves</li> <li>- Eye Protection: safety glasses, optional</li> <li>- Boots – Heavy duty, leather with over the ankle support (8” high boots preferred) and aggressive non-skid soles</li> <li>- Appropriate Field Attire – long pants, long-sleeved shirt optional</li> <li>- Leg Protection: shin guards, optional</li> </ul>

TASKS/PROCEDURES	POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
Pre-operation inspection: <ul style="list-style-type: none"> <li>- Missing or loose parts</li> <li>- Maintenance needs</li> </ul>	Personal injury  Property damage	<ul style="list-style-type: none"> <li>- Inspect hand tools before going in the field. Tighten loose nuts and bolts. Tighten loose heads. Inspect general condition of handles.</li> <li>- Tag unsafe tools for repair.</li> <li>- Ensure that cutting tools are sharp.</li> </ul>
Transporting hand tools <ul style="list-style-type: none"> <li>- By vehicle</li> </ul>	Cuts from sharp edges  Property damage	<ul style="list-style-type: none"> <li>- Wear gloves while handling tools.</li> <li>- Do not transport tools in passenger compartment.</li> <li>- Use sheaths or scabbards to cover sharp edges.</li> <li>- Secure tools to minimize movement during transport.</li> <li>- Carefully pack and unpack tools with sharp edge.</li> <li>- Communicate with workers receiving tool.</li> </ul>
Transporting hand tools <ul style="list-style-type: none"> <li>- Hiking</li> </ul>	Cuts and abrasions	<ul style="list-style-type: none"> <li>- Wear gloves while carrying tools.</li> <li>- Keep sheath on tool until work begins.</li> <li>- Carry tool at your side on the downhill side, so that it can be easily tossed away should you slip.</li> <li>- Crew spacing is important. Hike at least 10 feet apart</li> </ul>

<p>General Operation</p> <ul style="list-style-type: none"> <li>- Weeding/trimming</li> </ul>	<p>Cuts and abrasions</p>       <p>Leg injury</p>       <p>Avoid creating vegetation hazards</p>	<ul style="list-style-type: none"> <li>- Each different cutting tool has its own special use, operational techniques and unique safety concerns. Learn by OJT with experienced operators. Some basic principles include:</li> <li>- Wear gloves.</li> <li>- Crew spacing is very important: work at minimum of 15 – 20 ft. apart.</li> <li>- Keep cutting edge sharp, so tool cuts rather than bounce off woody vegetation.</li> <li>- For swinging tools, swing them parallel to or away from your body line.</li> <li>- Be aware of your surroundings, look ahead of swing to anticipate obstacles such as rocks or logs which can deflect tool.</li> <li>- When swinging a tool above your shoulder, be aware that the downward stroke can be redirected after striking woody vegetation.</li> <li>- Assure firm footing and good balance.</li> <li>- During wet conditions, swinging tools become difficult to handle. Make adjustment by reducing swing stroke or suspend that portion of the operation.</li> <li>- Trim woody vegetation flush to ground or flush to trunk whenever possible.</li> <li>- Disperse cut vegetation off the trail.</li> </ul>
<p>General Operation</p> <ul style="list-style-type: none"> <li>- Weeding/trimming</li> </ul>	<p>Wear and tear from repetitive motion. Impact and fatigue injury to hand, wrist or arm.</p>    <p>Fatigue.</p>    <p>Co-worker or park visitor in <b>work zone.</b></p>	<ul style="list-style-type: none"> <li>- Regularly rotate job assignments/tools.</li> <li>- Alternate between different sides of trail.</li> <li>- Use anti-vibration gloves with wrist supports for certain tools.</li> <li>- Pace yourself for the day's assignment. Take frequent breaks. Drink plenty of water.</li> <li>- Be alert to effects of poor air quality. Take more frequent breaks. Consider postponing weeding operation until more favorable conditions prevail.</li> <li>- Be alert for park visitors entering work area. Immediately stop weeding operation until visitors are well clear of work zone.</li> <li>- Clearly communicate to co-workers when visitors or co-workers are passing through work zone.</li> </ul>

General Operation - Weeding/trimming	Environmental hazards: - Ticks, bees and snakes  - Poison ivy	<ul style="list-style-type: none"><li>- Be alert for ticks, bees and snakes at certain times of the year.</li><li>- Refer to Tick JHA for precautions and advice on tick bites.</li><li>- Anticipate bee and snake habitat. Have an escape plan.</li><li>- Stock first aid kit with appropriate supplies.</li><li>- Be alert for poison ivy. Avoid it, if you can.</li><li>- Be aware of your individual sensitivity to poison ivy.</li><li>- If you have sensitivity: pre-treat with Technu-type products and wash-up afterwards.</li></ul>
Emergency Evacuation Plan	Serious injury and illness	<ul style="list-style-type: none"><li>- Crew members carry park radios.</li><li>- First aid kits are carried with each crew in the field and on vehicles.</li><li>- Minor injuries are treated in the field.</li><li>- When serious injuries/illnesses occur, park Comm Center is notified ASAP. A treatment and evacuation plan is initiated.</li><li>- Trail Crew staff are trained in first aid, CPR and as litter team members when training is available.</li></ul>

## JOB HAZARD ANALYSIS – Blowdown Removal with Cross-cut Saws

<b>Job Task:</b> <b>Blowdown Removal with Cross-Cut Saws</b>		<b>Job Hazard Analysis Developed and Reviewed by:</b> <b>Employees developing this JHA: (Sept. 2005)</b> Charlie Rudacille, North District & South District Trail Crews, Shawn Green  <b>Employees updating this JHA:</b> Don Harvey, Shawn Green  <b>Reviewers:</b> Roger Dovel, CT Campbell, Charlie Newton
<b>Unit:</b> SHEN – NCR Branch of BC Mgt. & Trails		
<b>Required Safety Training for this Task:</b> First Aid & CPR Training for 1 or more members of crew -Basic Chain Saw Training for crew leader Park 16 hour course or Equivalent OTJ Training with Cross Cut Saws - Experienced operators shall have periodic Safety Refresher -Accident Reporting & Near Misses		<b>Certifications Required:</b> -Current First Aid and CPR Training -Basic Chain Saw Training for crew leader
<b>JHA Completion Date: 2003</b> <b>Updated: February 2008</b>	<b>Update Review Due:</b> <b>February 2010</b>	<b>Supervisor, Division Chief or Superintendent Signature:</b>  /s/ Steve Bair

**OSHA Standards:** 29 CFR 1910.266    Logging Operations  
                                   1910.133    Eye & Face Protection  
                                   1910.138    Head Protection  
                                   1910.139    Foot Protection  
                                   1910.138    Hand Protection

REQUIRED EQUIPMENT & TOOLS FOR JOB	REQUIRED SAFETY EQUIPMENT
<ul style="list-style-type: none"> <li>- Crosscut saw with sheath and handles.</li> <li>- Crosscut saw kit with at least 2 wedges, single bit axe, double bit axe and pruning saw.</li> <li>- First aid kit equipped for serious cuts (1910.266, App A)</li> <li>- Optional equip.: saw lubricant, come-along device, lever (rock bar)</li> </ul>	<b>Personal Protective Equipment (PPE):</b> <ul style="list-style-type: none"> <li>- Boots – Heavy duty, steel-toed, leather with over the ankle support (8” high boots preferred) and aggressive non-skid soles</li> <li>- Eye Protection: safety glasses</li> <li>- Hand Protection: leather or other cut resistant gloves</li> <li>- Hard Hat: required for overhead hazards</li> <li>- Appropriate Field Attire – long pants</li> </ul>



TASKS/PROCEDURES	POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
Handling Saws and Axes	Cuts and Abrasions	<ul style="list-style-type: none"> <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> <li>- Old fire hose makes a good sheath. The sheath is secured with parachute cord or velcro.</li> </ul>
Transporting Saws and Axes <ul style="list-style-type: none"> <li>- By vehicle</li> </ul>	Cuts and Abrasions  Property damage	<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>
Transporting Saws <ul style="list-style-type: none"> <li>- By hiking</li> <li>- Saw carried on shoulder</li> </ul>	Cuts and Abrasions	<ul style="list-style-type: none"> <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>
Transporting Saws <ul style="list-style-type: none"> <li>- By hiking</li> <li>- Saw carried with sling or carrying strap</li> </ul>	Cuts and Abrasions	<ul style="list-style-type: none"> <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>Procedures: Limbing &amp; Bucking</b> - Size-up  - Escape routes  - Footing  - Overhead Hazards  - Anticipate Bind  - Anticipate Tension  - Rolling Logs  - Cut logs to manageable size	Personal injury          Injury from releasing wood under tension    Injury from rolling logs    Back injury or muscle strain	<ul style="list-style-type: none"> <li>- Consider lean, compression, tension, limbs, soundness of tree, diameter, spring poles, overhead hazards, escape routes, “safety circle”.</li> <li>- All limbing, bucking, &amp; felling operations require clear escape routes.</li> <li>- Ensure firm stable footing</li> <li>- Whether bucking, limbing or felling look up and around often.</li> <li>- Use hard hats, if overhead hazards are present.</li> <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> <li>- Watch for and carefully relieve tension on saplings and limbs with a series of small cuts to tensioned side.</li> <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> <li>- Cut logs small enough to be safely moved.</li> <li>- Use levers, skids or come-a-longs to move large logs.</li> </ul>
Managing human factors	Personal injury   Fatigue	<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>- It is OK to 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>Procedures: Felling</b>	Felling: - Numerous potential hazards.	<ul style="list-style-type: none"> <li>- Felling of trees is <b>NOT</b> covered by this JHA.</li> <li>- Generally speaking felling safety considerations for chain saws also apply to crosscut saws. However, the crosscut saw has unique techniques for felling.</li> <li>- Crosscut saw felling should be attempted by only by experienced individuals specifically trained in crosscut saw felling.</li> </ul>

Emergency Evacuation Plan	Managing serious injury and illness	<ul style="list-style-type: none"><li>- Crew members carry park radios.</li><li>- First aid kits are carried with each crew in the field and on vehicles.</li><li>- Minor injuries are treated in the field.</li><li>- When serious injuries/illnesses occur, notify park Comm Center ASAP. A treatment and evacuation plan is initiated.</li><li>- Trail Crew staff are trained in first aid, CPR and as litter team members when training is available.</li></ul>
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## JOB HAZARD ANALYSIS – Power Weeder Operation

<b>Job Task:</b> <b>Power Weeder Operation</b>	<b>Job Hazard Analysis Developed and Reviewed by:</b> <b>Employees developing this JHA: (Sept. 2003)</b> CT Campbell and Central District Trail Crew, Shawn Green	
<b>Unit:</b> SHEN – NCR Branch of BC Mgt. & Trails	<b>Employees updating this JHA:</b> Don Harvey, Shawn Green  <b>Reviewers:</b> Don Harvey, Roger Dovel, Charles Newton	
<b>Required Safety Training for this Task:</b> - OTJ training & proficiency review by supervisor. - Review manufacturer's operating manual - At least one and as many crew members as possible are trained in First Aid/CPR. - Accident Reporting & Near Misses	<b>Certifications Required:</b> - None	
<b>JHA Completion Date: 2003</b> <b>Updated: February 2008</b>	<b>Update Review Due:</b> <b>February 2010</b>	<b>Supervisor, Division Chief or Superintendent Signature:</b>  /s/ Steve Bair

**OSHA Standards:** 29 CFR 1910.95      Occupational Noise Exposure  
    1910.133      Eye & Face Protection  
    1910.136      Foot Protection  
    1910.138      Hand Protection

REQUIRED EQUIPMENT & TOOLS FOR JOB	REQUIRED SAFETY EQUIPMENT
<ul style="list-style-type: none"> <li>- Power weeder with harness.</li> <li>- Extra spool, string, accessories</li> <li>- Belt multi-tool like Leatherman</li> <li>- First aid kit carried by crew</li> <li>- Park radio</li> </ul>	Power Weeder Personal Protective Equipment (PPE): <ul style="list-style-type: none"> <li>- Eye Protection: <b>safety glasses (wrap-around)</b>, face shield or screen as needed</li> <li>- Hearing Protection: ear plugs or muffs</li> <li>- Hand Protection: leather gloves, consider anti-vibration gloves</li> <li>- Boots – Heavy duty, leather with over the ankle support (8” high boots preferred) and aggressive non-skid soles</li> <li>- Appropriate Field Attire – long pants, long-sleeved shirt optional</li> <li>- ANSI 107-2004 Class 2 reflective safety vest when working along road</li> </ul>

TASKS/PROCEDURES	POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
Pre-operation inspection for <ul style="list-style-type: none"> <li>- Missing or loose parts</li> <li>- Maintenance needs</li> </ul>	Personal injury  Property damage	<ul style="list-style-type: none"> <li>- Before running weeder inspect thoroughly. Tighten loose bolts, nuts and linkage. Inspect fuel lines and tanks for leaks.</li> <li>- If unit is unsafe to operate, tag it “Out of Service” in a way that will be immediately obvious to anyone attempting to operate.</li> <li>- Ensure that all guards/shields are in place, secure and operating properly.</li> <li>- Adjust handle and harness for comfort and balance.</li> </ul>
Transporting Weeder <ul style="list-style-type: none"> <li>- By vehicle</li> </ul>	Fuel leak  Property damage	<ul style="list-style-type: none"> <li>- Transport in the bed of truck.</li> <li>- Secure weeder, so that it will not flip over.</li> </ul>
General Operation <ul style="list-style-type: none"> <li>- Fueling</li> </ul>	Fire  Fuel spill	<ul style="list-style-type: none"> <li>- Always shut off engine and allow it to cool.</li> <li>- Remove fuel filler cap carefully as to allow any pressure to build-up in tank to release slowly.</li> <li>- Select bare ground for fueling. Move at least 10 feet from fueling spot before starting engine.</li> <li>- Make sure that fuel cap is on tight when done.</li> </ul>
General Operation <ul style="list-style-type: none"> <li>- Starting</li> </ul>	Injury from flying objects and debris	<ul style="list-style-type: none"> <li>- Once started, the weeder may fling objects and debris.</li> <li>- Cold start weeder on the ground.</li> <li>- Warm weeder, secured by operator in harness, maybe started by co-worker.</li> </ul>

<p>General Operation</p> <ul style="list-style-type: none"> <li>- Weeding</li> </ul>	<p>Injury from flying objects and debris</p> <p>Co-worker or park visitor in <b>danger zone</b></p> <p>Horses enter <b>danger zone</b></p> <p>Burn injury</p> <p>Fatigue</p> <p>Exposure to exhaust and fumes</p>	<ul style="list-style-type: none"> <li>- Operate with cutting head just off ground and level to reduce throwing rocks and debris.</li> <li>- When operating weeder above ground level safety glasses and face shield should be in place.</li> <li>- Crew spacing: minimum of 50 feet (<b>danger zone</b>).</li> <li>- Be alert for park visitors entering work area. Immediately stop weeding operation until visitors are well clear of <b>danger zone</b>.</li> <li>- Consider posting lookouts or signs on high-use trails.</li> <li>- If possible, have a crew member without a weeder listen to park radio and communicate with park visitors.</li> <li>- Shut off weeder in the presence of horses. In some cases, weeder may need to be moved out-of-sight of horses.</li> <li>- Avoid touching hot muffler or engine. Keep these areas clear of debris.</li> <li>- Take frequent breaks. Drink plenty of water.</li> <li>- Be alert to effects of exhaust and fumes on days with poor air circulation and/or poor air quality. Take more frequent breaks. Rotate assignments. Consider postponing weeding operation until more favorable conditions prevail.</li> </ul>
<p>General Operation</p> <ul style="list-style-type: none"> <li>- Weeding</li> </ul>	<p>Environmental hazards:</p> <ul style="list-style-type: none"> <li>- Ticks, bees and snakes</li> <li>- Poison ivy</li> </ul>	<ul style="list-style-type: none"> <li>- Be alert for ticks, bees and snakes at certain times of the year.</li> <li>- Anticipate bee and snake habitat. Have an escape plan.</li> <li>- Refer to Tick JHA for precautions and advise on tick bites.</li> <li>- Stock first aid kit with appropriate supplies.</li> <li>- Be alert for poison ivy. Avoid it, if you can.</li> <li>- Be aware of your individual sensitivity to poison ivy.</li> <li>- If you have sensitivity: pre-treat with Technu-type, skin protection barrier products and wash-up afterwards.</li> </ul>
<p>General Operation</p> <ul style="list-style-type: none"> <li>- Weeding along Skyline Drive</li> </ul>	<p>Traffic hazards to worker</p> <p>Flying debris hazard to traffic</p>	<ul style="list-style-type: none"> <li>- Wear an orange vest to improve your visibility to traffic.</li> <li>- Use a pilot truck while weeding between Skyline Drive and rock wall to create maximum separation between worker and traffic.</li> </ul>

Emergency Evacuation Plan	Serious injury and illness	<ul style="list-style-type: none"><li>- Crew members carry park radios.</li><li>- First aid kits are carried with each crew in the field and on vehicles.</li><li>- Minor injuries are treated in the field.</li><li>- When serious injuries/illnesses occur, park Comm Center is notified ASAP. A treatment and evacuation plan is initiated.</li><li>- Trail Crew staff are trained in first aid, CPR and as litter team members when training is available.</li></ul>
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**JOB HAZARD ANALYSIS – Chainsaw Safety Operation**

<b>Job Task:</b> <b>Chainsaw Safety Operation</b>		<b>Job Hazard Analysis Drafted by following folks</b> <b>Employees Performing this Task:</b> Steve O'Connor, Charlie Hall
<b>Unit:</b> SHEN - Park wide		
<b>Required Safety Training for this Task:</b> First Aid Training for 2 or more members of each crew -Basic Chain Saw Training Park 16 hour course or S-212 (wild land fire training) - Experienced operators shall have periodic Safety Refresher -Accident Reporting & Near Misses		<b>Reviewers:</b> Charles Newton, Gary Lucas, Roger Dovel, Skip Wissinger
<b>Required Safety Training for this Task:</b> First Aid Training for 2 or more members of each crew -Basic Chain Saw Training Park 16 hour course or S-212 (wild land fire training) - Experienced operators shall have periodic Safety Refresher -Accident Reporting & Near Misses		<b>Certifications Required:</b> -Current First Aid Certificate -Chain Saw Operator Evaluation -Experienced operators shall have documented, periodic Safety Refresher
<b>JHA Completion Date:</b>  August, 2002	<b>Update Review Due:</b>	<b>Supervisors Signature:</b>  /s/

**OSHA Standards:** 29 CFR 1910.266    Logging Operations  
                                   29 CFR 1910.95    Occupational Noise Exposure  
                                   1910.133    Eye & Face Protection  
                                   1910.140    Head Protection  
                                   1910.141    Foot Protection  
                                   1910.138    Hand Protection

REQUIRED EQUIPMENT & TOOLS FOR JOB	REQUIRED SAFETY EQUIPMENT
Chainsaw kit with at least 2 wedges, single bit axe, Chainsaw wrench, chain files with handles, spare bar nuts, saw chain, & possibly spare bar, spark plug, etc. -Saw with proper bar length, properly filed and maintained saw chain, chain brake, spark arrestor muffler, throttle lock and positive shut off switch (see ANSI B175.1-2000, Safety Requirements for Gasoline Powered Chain Saws) -Approved containers for gas and bar oil that are clearly labeled with proper mix ratio and freshness date -Portable fire extinguisher (or wild land fire tools) -First aid kit equipped for serious cuts(1910.266, App A)	<b>Chainsaw Personal Protective Equipment (PPE):</b> -Boots – Heavy Duty, cut resistant uppers with over the ankle support (8” high boots preferred) and aggressive non-skid soles Chaps with Kevlar, length to overlap boot tops -Eye Protection: safety glasses, goggles, face shield or combination -Hearing protection: plugs or muffs -Hand Protection: leather or other cut resistant gloves -Hard Hat: ANSI approved not a bump cap -Appropriate Field Attire - <b>NO</b> shorts



POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
<p>1. Injury due to unsafe equipment or use.</p> <p>2. Unsafe chain saw operator</p> <p>3. Poor Communication can increase accidents</p> <p>4. Transportation – Vehicle Fire Danger from gasoline, Cuts/lacerations during transportation.</p> <p>5. Transportation – Handling/Carrying/Walking Cuts/lacerations during transportation.</p>	<p>1. <u>Before Starting the Saw</u> read operators manual, check controls, spark arrestor and chain tension, check all bolts and handles to ensure they are functioning properly and adjusted according to manufacturer's instructions, -Re-check saw maintenance throughout the day. -Fuel the saw at least 10 feet away from sources of ignition and move saw at least 10 feet away from fueling area before starting. -Fuel containers must be approved by UL, FM, DOT or other nationally recognized testing laboratory and must not exceed 5-gallon capacity.</p> <p>2. <b><u>No drugs or alcohol at all.</u></b> -If taking <u>medication</u> that may cause drowsiness, do not operate a chain saw. -If you become fatigued, ask someone else to do some sawing or take a short break. -It is OK to refuse a job, if you do not feel comfortable you can do it safely -Eat well and frequently – sawing uses lots of energy. -Drink plenty of water to avoid dehydration. -Warm up your muscles and stretch before starting heavy work. -Always wear proper personal protective, safety gear described above.</p> <p>3. <b><u>Never work alone with a chain saw.</u></b> -Notify supervisor or other responsible employees where you will be working and stay within visible or audible contact of another employee. -Take a radio or cell phone to the work site for emergencies. -When <u>felling</u>, other individuals at the work site should remain at least 2 tree lengths distant from the chain saw operator. -Large work groups of three or more should have one act as leader and be responsible for safety, spacing of workers, location of tools, first aid kits, etc.</p> <p>4. Chain bar scabbard in place, -Secure fuel &amp; bar oil containers, -Chain saw &amp; fuel transported outside passenger compartment.</p> <p>5. Chain Brake on, saw off when moving, -Keep saw bar behind and away from body, usually below your waist and on downhill side, push saw away if you begin to fall or slip. -On shoulder – only with proper protection &amp; precautions</p>

POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
<p>6. Adverse Conditions: Weather (heat, cold, ice etc.), poor visibility, poor footing, wasps, ticks, snakes, poison ivy, and other hazards of the outdoor work environment.</p> <p>7. Fueling Fire/explosion hazards, skin contact with gas or oil.</p> <p>8. Starting Procedure Avoiding saw kickback, muscle pull or other injury.</p> <p>9. Safe Chainsaw Operating</p>	<p>6. Never start or continue to fell trees during high winds, electrical storms or when heavy fog, low clouds or smoke obscures treetops. -Never fall trees or snags when inadequate lighting impairs visual inspection. -Inspect work area to avoid wasps, snakes, poison ivy and other natural hazards. -Plan work to avoid slippery conditions when working on steep slopes. -Avoid exposure to extremes of hot or cold when possible and take breaks to keep hydration and body temperature regulated.</p> <p>7. Mix and fuel in well vented area, -Do not smoke or allow ignition sources within 10 feet of refueling, -Use a spout or funnel and wipe off spills on saw, -If saw is hot, Let saw cool before refueling, -Fill tank on bare ground or other non-combustible surface. -Check for proper oil/gas mix before fueling -Clean up any spills at once.</p> <p>8. Read operating instructions and know how to use controls etc. -Put on proper personal protective, safety gear described above. -Start the saw at least 10 feet from fueling area, -Start saw with chain brake engaged -Place chainsaw on ground or otherwise firmly supported. -Use short, firm pulls on starter cord. -<b>Never ‘drop start’ a saw</b> (too easy to lose control).</p> <p>9. Use both hands with a firm grip, thumb encircling both handles. -DO NOT cut with power head above shoulder. -Cutting with power head between waist and shoulder should be considered a special dangerous (watch-out) operation. -Never come up behind the saw operator to get their attention. -Maintain balanced stance with good footing. -Clear the cutting area of obstacles. -Check for overhead hazards such as widow makers, broken limbs, tops, etc. -Lead sawyer should determine if spotters are needed. -<b>Plan and analyze the job before you start it.</b></p>

POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
<p>10. Bucking, Brushing &amp; Limbing</p> <p>Most accidents occur when cutting small trees, limbs, vines or brush.</p>	<p>10. Examine the ground area for hazards and remove those you can.</p> <ul style="list-style-type: none"> <li>-Know where bar tip is at all times and avoid touching objects with bar tip.</li> <li>-While brushing, space others minimum of 20 feet or twice the height of the brush away from the sawyer.</li> <li>-Use a stance that is comfortable and stable.</li> <li>-Position yourself to one side of possible kickback of chain saw.</li> <li>-Look for spring poles or similarly stressed wood.</li> <li>-Release tension gradually with series of small cuts on tension side or use shaving technique from compression side.</li> <li>-When cutting large limbs, be alert for chain binding and kickback.</li> <li>-DO NOT stand on tree while cutting limbs.</li> <li>-Use proper limbing technique starting at the butt end.</li> <li>-Never more than 1 person at a time working on any tree.</li> <li>-Remove limbs and brush before bucking.</li> <li>-To prevent rolling, leave some limbs to support the main trunk.</li> <li>-Bucking must be done from the uphill side of the tree or log.</li> <li>-Never buck a tree that is considered unusually dangerous.</li> <li>-Anticipate log reactions when severed.</li> <li>-Protect your feet, ease off pressure and chain speed near end of bucking cut.</li> <li>-Give special attention to windfalls or ice damage to check for strains, breaks, binds or tension.</li> </ul>
<p>11. Felling Trees</p> <p>Felling is dangerous work with many potential hazards. Especially dangerous are the many ‘snags’ (standing dead trees) or other hazardous trees (some of which have hidden structural defects.</p>	<p>11. Park Maintenance Supervisors, Trails Crew Leaders, or Wildland Fire qualified Fallers should be contacted for technical assistance with any felling operations. Do not Fell hazardous trees unless you are experienced and are sure you can safely do this work.</p> <p>Ask for help – Additional planning and possible use of heavy equipment (as needed) can help to reduce the risks of this work.</p>

## JOB HAZARD ANALYSIS - Ticks

<b>Job Task:</b> <b>Work in tick infested areas</b>		<b>Employees developing this JHA:</b> 2003 Tick Work Group: S. Green, D. Harvey, R. Dovel  <b>Reviewers:</b> Division Chiefs, Safety Committee & Kelly Ann Gorman
<b>Unit:</b> SHEN-All Units		
<b>Required Safety Training for this Task:</b> -Park general safety orientation -Job specific safety discussions on tick awareness, tick avoidance & repellent options and tick removal protocols.		<b>Certifications Required:</b> -None
<b>JHA Completion Date:</b> July, 2003 Updated November, 2007	<b>Update Review Due:</b> December, 2008	<b>Supervisors Signature:</b> /s/

**Prevailing Law/Policy:** Occupational Safety and Health Act (OSHA)

REQUIRED EQUIPMENT & TOOLS FOR THE JOB	REQUIRED <u>SAFETY</u> EQUIPMENT
- Determined by job at hand	- First Aid kit nearby with tick removal devices, such as needle-nose tweezers or tick nippers.

POTENTIAL HAZARDS	SAFETY CONTROL FACTORS
1. Tick attachment to skin	<p>1. <b><u>Tick awareness:</u></b></p> <ul style="list-style-type: none"> <li>High-risk work groups should receive a thorough orientation to tick life forms, tick identification, and signs &amp; symptoms of tick-borne diseases. See <b>Appendix A</b> for more information.</li> <li>Low-risk work groups and all new employees should receive a brief orientation to ticks and signs &amp; symptoms of tick-borne diseases.</li> </ul> <p>2. <b><u>Tick avoidance precautions</u></b></p> <p>To more easily detect ticks, non-uniformed employees should wear light colored clothing.</p> <ul style="list-style-type: none"> <li><b>Mechanical Barriers:</b> <ul style="list-style-type: none"> <li>To keep ticks from reaching skin, consider doing the following based on level of risk: Wear long-legged pants. Wear long-sleeved shirt and hat. Tuck shirt into pants. Tuck pant legs into socks or boots. Consider other barrier devices, such as, gaiters, 'rhyno-skin', 'bug-skin', elastic bands, duct tape, when they are an option.</li> </ul> </li> </ul>

- **Chemical Barriers:**

- 0.5% Permethrin insecticide applied to clothing is effective in reducing tick bites; however, when used improperly it can create negative health effects. Supervisors and employees should review and sign-off on “Employee Tick and Insect Repellent Awareness Form” before using park-supplied chemicals. DEET is **not** effective against ticks that carry lyme disease. See **Appendix B for chemical barrier use safety.**
- Inspect clothing frequently for ticks. Have a companion inspect your back.
- Inspect your head and body thoroughly when you get in from the field (office or home). Use a mirror or have a companion check your back.
- Employees in high-risk groups should be issued tick removal devices that they can carry at work and at home.
- When working in tick habitat, consider not wearing work clothing home. Consider changing out of work clothes to reduce the chance of carrying ticks home.

### **3. Remove embedded tick safely**

- Do not use heat or harsh fluids to get ticks to back out of skin.
- Use needle-nose tweezers or tick nippers to grab the embedded head of tick and pull straight out. Do not twist. Twisting may break off the head and leave it embedded. Do not grab the tick body. This may force tick body fluids into your skin.
- **Consider saving the tick for later identification in a small zip lock bag or firmly stuck to transparent tape. Tick ID can be a big help in disease diagnosis.**

### **4. Cleanse the skin at bite site**

- Cleanse well with soap and water.

### **5. Document tick bite or embedded tick.**

- An embedded tick is one that has broken the skin by attaching itself with its mouth parts.
- Each employee should document (on a CA-1 using SMIS) any embedded tick that requires medical attention. **All work groups should document every embedded tick (or ticks if multiple bites from one day) on “SNP-Tick Log” (See Appendix C).** When medical attention is needed, obtain a CA-16 to get the doctor paid for workers compensation claims. Tell the doctor about your tick bite(s) and show the tick, if you saved it.
- Submit a copy of the log to the Park Safety Officer at the end of each Calendar Year and the employee and supervisor should each keep a copy.
- There is no need to seek medical attention for each tick bite, unless bulls-eye rash and/or other tick disease symptoms occur.

<p><b>2. Illness due to tick attachment</b></p>	<p><b>1. <u>Be alert for signs &amp; symptoms of tick-borne diseases:</u></b></p> <ul style="list-style-type: none"> <li>• <b>Lyme disease</b> symptoms may include a characteristic "bull's-eye" rash that develops a few days or weeks after the tick bite. At the same time, flu-like symptoms such as fever, malaise, fatigue, headache, muscle and joint aches appear. Ixodes ticks are most likely to transmit infection after feeding in skin for two or more days (NPS).</li> <li>• <b>Rocky Mtn. Spotted Fever</b> symptoms include sudden onset of fever, headache, and muscle pain, followed by development of spotted rash at wrists or ankles (NPS).</li> <li>• <b>Ehrlichiosis:</b> Symptoms are similar to Lyme disease, but differ with a rapid onset of fever and severe headache and the absence of the rash around the tick bite (NPS).</li> <li>• <b>Babesiosis:</b> Most infected people have no symptoms. For those that do, there is a gradual on-set of not feeling well and loss of appetite and fatigue (NPS).</li> </ul> <p><b>2. <u>If symptoms occur, request to see a physician immediately and fill out the appropriate forms.</u></b></p> <ul style="list-style-type: none"> <li>• Fill out CA-1 &amp; CA-16 and request to see physician if disease symptoms occur.</li> <li>• Be sure to tell the doctor that a tick bit you and that you regularly come in contact with ticks at work.</li> </ul>
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