

<b>JOB SAFETY ANALYSIS</b>	JOB TITLE OR OPERATION: <b>Mowing and Exotic Plant Removal</b>	DATE:	__X__ NEW REVISED
PLANT / LOCATION:	COMPANY / ORGANIZATION: <b>NPS/ROMO/ Continental Divide Research Learning Center</b>	DEPARTMENT: <b>Resources Management</b>	EMPLOYEE / OPERATOR: <b>employees, volunteers</b>
SUPERVISOR:	ANALYSIS BY:	REVIEWED BY:	APPROVED BY:

<b>REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE)</b>	Ear, eye, and skin protection including gloves, goggles, respirator, long sleeves and pants
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<b>SEQUENCE OF BASIC JOB STEPS</b>	<b>POTENTIAL HAZARDS UNSAFE ACTS OR CONDITIONS</b>	<b>RECOMMENDED ACTION OR PROCEDURE</b>
<b>Mechanical Plant Removal</b>	<ul style="list-style-type: none"> <li>Piercing of skin by spines. Strain or injury to back.</li> </ul>	<ul style="list-style-type: none"> <li><b>Wear leather gloves</b> to prevent spines from piercing skin.</li> <li><b>Maintain proper posture</b> when digging and lifting plants.</li> <li><b>Wear orange safety vests</b> when working near the road.</li> <li><b>Stretch</b> throughout the day to minimize back and neck pain, strains and sprains.</li> </ul>
	<ul style="list-style-type: none"> <li>Strain or injury to back while transporting bags.</li> </ul>	<ul style="list-style-type: none"> <li><b>Use proper lifting and carrying posture</b> when transporting bags full of plant parts.</li> </ul>
<b>Linetrimmer/Mower Operations</b>	<ul style="list-style-type: none"> <li>Spilling fuel and/or oil on self or ground. Fume inhalation.</li> <li></li> </ul>	<ul style="list-style-type: none"> <li><b>Do not overfill fuel reservoirs.</b></li> <li><b>Remove flammable objects</b> before refueling.</li> <li><b>Use safety cans with spouts.</b></li> <li><b>Avoid inhaling fumes.</b></li> </ul>
	<ul style="list-style-type: none"> <li>Cuts, rocks and debris kicked up during operation, burns on muffler, noise pollution.</li> <li></li> </ul>	<ul style="list-style-type: none"> <li><b>Watch for debris</b> being kicked up in areas of loose soil and avoid operating lime trimmers in such areas.</li> <li><b>Wear personal protective equipment (PPE)</b> (eye protection, ear protection, long sleeves and pants).</li> <li><b>Avoid contact with muffler</b> when machine is hot.</li> </ul>
	<ul style="list-style-type: none"> <li>Mishandling the linetrimmer/mower</li> </ul>	<ul style="list-style-type: none"> <li><b>Avoid contact with muffler</b> when machine is hot.</li> <li><b>Store trimmer properly:</b> Do not store hot trimmer or mower near flammable materials and store so that fuel reservoir cap is up and fuel will not leak.</li> </ul>
<b><u>Cache Cleanup</u></b>	<ul style="list-style-type: none"> <li>Hantavirus or dust inhalation.</li> </ul>	<ul style="list-style-type: none"> <li><b>Wear dusk mask/respirator.</b></li> <li><b>Wet suspect areas</b> down with bleach and water mix.</li> <li><b>Clean respirator</b> after use.</li> </ul>
<b>Tool use and maintenance</b>	<ul style="list-style-type: none"> <li>Leaving tools with the point facing upward or scattered around work site</li> </ul>	<ul style="list-style-type: none"> <li><b>Keep tools in a central location</b> and always have the point of tools pointing towards the ground.</li> <li><b>Pickup tools</b> before breaks, lunch, and at the end of each day.</li> </ul>
	<ul style="list-style-type: none"> <li>Tripping hazard.</li> </ul>	<ul style="list-style-type: none"> <li><b>Safe storage and placement:</b> Never place tools in a position where they may cause injury or pose a trip hazard.</li> <li><b>Be aware</b> of your surroundings when using any tool.</li> </ul>
	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
	<ul style="list-style-type: none"> <li>Cuts with sharp tool edge. Splinters from wood handles. Metal shards when using grinder.</li> </ul>	<ul style="list-style-type: none"> <li><b>Wear gloves</b> when sharpening tools.</li> <li><b>Wear eye protection</b> and gloves when operating grinder.</li> <li><b>Sand wood handles</b> if wood is beginning to splinter.</li> </ul>
<b>Trail Surveys (not likely to be CDRLC)</b>	<ul style="list-style-type: none"> <li>Lightning danger, backcountry travel dangers, footing.</li> </ul>	<ul style="list-style-type: none"> <li>Follow lightning procedures.</li> </ul>

volunteer task) <u>See also lightning, off-trail travel or other pertinent JHAs.</u>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Carry radio and extra battery.</li> <li>• Carry map of area.</li> <li>• Bring sufficient clothing, water, and food.</li> <li>• Walk deliberately on trails and beware of tripping hazards.</li> </ul>
Road Surveys (not likely to be CDRLC volunteer task) <u>See also hostile visitors, front and back-country travel</u>	<ul style="list-style-type: none"> <li>• Traffic.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Wear orange safety vests.</li> <li>• Walk on outside of road shoulder, as far from lane as possible.</li> <li>• Make sure traffic sees you.</li> </ul>
Flamer Operation (not likely to be CDRLC volunteer task)	<ul style="list-style-type: none"> <li>• Improper lighting</li> </ul>	<ul style="list-style-type: none"> <li>• Light with striker only, not with matches or lighter</li> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• Burns and other injuries</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain safe distance from flamer end when lit.</li> <li>• Let flamer cool down before touching.</li> <li>• Wear proper PPE</li> <li>• Follow correct operation procedures for lighting and use.</li> <li>• Have first aid kit and emergency plan on hand.</li> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• Propane leaks</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that propane tank is closed off completely after use.</li> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• Burning unwanted plants</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Follow burn plan and prescription.</li> <li>• Burn only target exotic plants.</li> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• Inadvertent lighting of surroundings</li> </ul>	<ul style="list-style-type: none"> <li>• Follow burn plan and prescription.</li> <li>• Have prescribed personnel on hand.</li> </ul>
Chemical Application (not likely to be CDRLC volunteer task)  Chemical storage	<ul style="list-style-type: none"> <li>• Spills during improper storage.</li> </ul>	<ul style="list-style-type: none"> <li>• Store chemicals in original container.</li> <li>• Follow storage procedures on label.</li> <li>• Follow state and federal storage laws and regulations.</li> <li>• Store chemical containers upright with secured lids.</li> </ul>
Equipment and PPE storage	<ul style="list-style-type: none"> <li>• Improper storage.</li> </ul>	<ul style="list-style-type: none"> <li>• Store equipment cleaned.</li> <li>• Store PPE separate from chemicals and application equipment.</li> </ul>
Filling Water Tanks	<ul style="list-style-type: none"> <li>• Falling.</li> </ul>	<ul style="list-style-type: none"> <li>• Use caution when climbing scaffold to fill water tank.</li> </ul>
Mixing and loading spray equipment	<ul style="list-style-type: none"> <li>• Exposure to chemical concentrates.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow mixing and loading instructions on label.</li> <li>• Wear proper PPE (rubber aprons, eye protection, gloves).</li> <li>• Mix away from water sources on proper surface (preferably concrete pad).</li> <li>• Triple rinse chemical containers and place rinse water into spray container.</li> </ul>
Transporting chemicals	<ul style="list-style-type: none"> <li>• Spills during improper transportation.</li> </ul>	<ul style="list-style-type: none"> <li>• Transport with containers secured.</li> <li>• Ensure that containers are transported upright and without potential for spills.</li> <li>• Carry chemicals and equipment in bed of truck, away from food, clean clothing, etc.</li> </ul>
Applying chemicals	<ul style="list-style-type: none"> <li>• Improper application.</li> </ul>	<ul style="list-style-type: none"> <li>• Have chemical MSDS's and labels on hand.</li> <li>• Wear PPE according to label plus additional if necessary or desired.</li> <li>• Apply according to label, away from water in most cases.</li> <li>• Check weather forecast and note local weather patterns and conditions.</li> <li>• Do not apply chemicals in high wind (&gt; 10 mph) conditions and discontinue application if winds come up.</li> <li>• Consider low relative humidity and resultant increase in drift potential.</li> <li>• Make sure area is properly signed.</li> <li>• Those without proper PPE may not enter spray area until after REI.</li> <li>• Have plenty of water for cleaning on site.</li> </ul>

		<ul style="list-style-type: none"> <li>Do not eat or touch genitals until hands are thoroughly washed with soap and water.</li> </ul>
Clean-up	<ul style="list-style-type: none"> <li>Contamination to clothing, improper disposal of water and containers.</li> </ul>	<ul style="list-style-type: none"> <li>Wash clothing under chemical suit with heavy-duty detergent and let soak for extra cycle.</li> <li>Run wash cycle empty after cleaning clothes.</li> <li>Line dry clothing in sun.</li> <li>Dispose of any clothing that chemicals were spilled onto.</li> <li>Throw away chemical containers in trash after triple-rinsing unless otherwise noted on label.</li> <li>Clean all application equipment after use.</li> <li>Wear PPE while cleaning application equipment, including eye protection and rubber apron.</li> <li>Clean and properly store all PPE, dispose of necessary PPE.</li> </ul>
Spills	Contamination to environment, wildlife, and people.	<ul style="list-style-type: none"> <li>Have Spill Kit on hand at application site.</li> <li>Notify appropriate authorities in case of spill.</li> </ul> <p>Do not enter site unless wearing proper PPE.</p>