



Injury and Illness Prevention Plan

This document outlines policies and procedures SCMTS uses to create a safe working environment for staff and volunteers. We strive to make safety a focus of all we do, and we are proud of our safety record. A focus on safety is not only the right thing to do, but it also provides significant cost savings to SCMTS and helps us leverage the generosity of our donors and supporters.

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Responsibility

The Injury and Illness Prevention Program (IIPP) administrator, **Garret Hammack - Superintendent** has the authority and responsibility for implementing the provisions of this program for **Santa Cruz Mountains Trail Stewardship**.

All managers, supervisors and lead personnel are responsible for implementing and maintaining the IIPP in their work areas and for answering worker questions about the Program. A copy of this IIPP is available in **SCMTS Google Drive, SCMTS Job Trailer, and at SCMTS office**.

Compliance

SCMTS management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by other employees and volunteers. Supervisors and lead personnel are expected to enforce the rules fairly and uniformly.

All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment.

The following is our system of ensuring that all workers comply with the rules and maintain a safe work environment:

1. Informing workers of the provisions of our IIPP;
2. Evaluating the safety performance of all workers;
3. Providing appropriate Personal Protective Equipment (PPE) and safety equipment for tasks;
4. Recognizing employees who perform safe and healthful work practices. This recognition is accomplished by: Informal recognition at weekly meetings and tailgate safety talks; potential for bonuses and/or other compensation due to savings from an excellent safety record.
5. Providing training to workers whose safety performance is deficient;
6. Disciplining workers for failure to comply with safe and healthful work practices. The following outlines our disciplinary process:
 - a. Verbal warning (documented) for minor offenses.
 - b. Written warning for severe or repeated violation.
 - c. Possible suspension or termination if employee refuses to implement safe working practices and continues behavior that jeopardizes their own safety and safety of others.
7. Other means that we use to ensure employee compliance with safe and healthful work practices include:

- a. Not pressuring employees to take risks and encouraging them not to perform tasks they are uncomfortable with.
 - b. Focusing on safety over all other job and productivity concerns.
 - c. Provide field employees with a stipend to spend on job appropriate footwear and field clothing.
8. Volunteers:
 - a. SCMTS often uses volunteers to help with trail construction and maintenance. Crew leaders and staff are expected to ensure that safety protocols outlined below are also followed by volunteers and emphasize safety in all work activities. A safety orientation should be done with all volunteers before starting any work. Any safety concerns should be immediately voiced by staff or crew leaders in a friendly but professional manner. Volunteers who continue unsafe practices or refuse to work safely should be asked to leave the project site.

Communication

We recognize that open, two-way communication between management and staff on health and safety issues is essential to an injury-free, productive workplace. We communicate safety and health information with employees the following ways.

1. New worker and volunteer orientation including discussion of safety and health policies and protocols
2. Regular review of our IIPP (annually in December)
3. Safety trainings
4. Posted safety information on equipment and in job trailer
5. Communicate and instruct employees orally about general safe working practices with respect to hazards unique to each employee's job assignments.

Hazard Identification

Periodic inspections to identify and evaluate workplace hazards shall be performed by SCMTS trail crew staff regularly to evaluate potential hazards at work sites.

Periodic inspections are performed according to the following schedule:

1. When we initially established our IIP Program;
2. When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace;
3. When new, previously unidentified hazards are recognized;

4. When occupational injuries and illnesses or “near-misses” occur;
5. When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously.
6. When planning or flagging work projects;
7. Daily jobsite inspections;
8. Whenever workplace conditions warrant an inspection.

INJURY, ILLNESS, & INCIDENT REPORTING

All Injuries, Illnesses, or Incidents shall be reported to management by any staff involved. An internal Incident Report shall be submitted by the reporting employee(s).¹

SCMTS will provide the CA State DWC 1² form to any injured employee within one-day of receiving notice of an injury. SCMTS utilizes the State of California, State Compensation Insurance Fund Form 3067e³ for reporting injuries and illnesses to the State.

ACCIDENT/EXPOSURE INVESTIGATIONS

Procedures for investigating workplace accidents and hazardous substance exposures include:

1. Visiting the accident scene as soon as possible;
2. Interviewing injured workers and witnesses;
3. Examining the workplace for factors associated with the accident/exposure;
4. Determining the cause of the accident/exposure;
5. Taking corrective action to prevent the accident/exposure from reoccurring;
6. Recording the findings and corrective actions taken.

HAZARD CORRECTION

Unsafe or unhealthy work conditions, practices or procedures shall be corrected in a timely manner based on the severity of the hazards. Hazards shall be corrected according to the following procedures:

1. When observed or discovered;
2. When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed workers from the area except those necessary to correct the existing condition.

¹ SCMTS Internal Incident Reporting, <https://forms.gle/JbgF5SaGRheWiSLd9>, 2022-04-11

² CA DWC Forms, <https://www.dir.ca.gov/dwc/forms.html>, 2022-04-11

³ CA SCIF Form 3067e, <https://content.statefundca.com/pdf/3067.pdf>, 2022-03-29

3. Workers necessary to correct the hazardous condition shall be provided with the necessary protection.

TRAINING

Employees and volunteer crew leaders receive training about hazards through our trail academy program as well as other training programs. Staff and volunteers also participate in safety training offered by our partner land management agencies like CA State Parks and CALFIRE. New employees will be provided training to familiarize them with SCMTS safety policies and practices. Training will be provided before any new job tasks or equipment are used by employees.

RECORDKEEPING

We maintain a record of all safety training that employees have completed. We maintain inspection records of corrected job hazards and a log of instructions for workers when they are first hired or assigned new duties.⁴

General Safety Orders

1. All persons shall follow these safe practices rules, render every possible aid to safe operations, and report all unsafe conditions or practices to the foreman or superintendent.
2. Foremen shall insist on employees and volunteers observing and obeying every rule, regulation, and order as is necessary to the safe conduct of the work, and shall take such action as is necessary to obtain observance.
3. All employees shall be given frequent accident prevention instructions. Instructions shall be given at least every 7 working days. When applicable, the accident prevention instructions shall also include specific instruction on the safe use, care and maintenance of fall protection equipment (i.e. fall arrest systems, positioning device systems, safety nets, etc.) used at the jobsite.
4. No one shall work under the influence of drugs or intoxicating substances which impair the employee's ability to safely perform the assigned duties.

⁴ SCMTS Safety-Training Record,
<https://drive.google.com/a/SCMTS.org/file/d/17mwrpV6Y2Xy6NMEev2cYVWsPr6bhzfPL>

5. Horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the employees shall be prohibited.
6. Work shall be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.
7. No one shall knowingly be permitted or required to work while an employee's ability or alertness is so impaired by fatigue, illness, or other causes that it might unnecessarily expose the employee or others to injury.
8. Employees shall not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter.
9. Employees shall ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the foreman or superintendent.
10. Crowding or pushing when boarding or leaving any vehicle or other conveyance shall be prohibited.
11. Workers shall not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their foreman.
12. All injuries shall be reported promptly to the foreman or superintendent so that arrangements can be made for medical or first aid treatment.
13. When lifting heavy objects use the large muscles of the leg instead of the smaller muscles of the back.
14. Inappropriate footwear or shoes with thin or badly worn soles shall not be worn.
15. Materials, tools, or other objects shall not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects.
16. Employees shall cleanse thoroughly after handling hazardous substances including poison oak, and follow special instructions from authorized sources.
17. Work shall be arranged that employees are able to face ladder and use both hands while climbing.
18. Gasoline shall not be used for cleaning purposes.
19. No burning, welding, or other source of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no

possibility of explosion exists, and authority for the work is obtained from the foreman or superintendent.

20. Any damage to scaffolds, falsework, or other supporting structures shall be immediately reported to the foreman and repaired before use.

Operation of Tools & Equipment

1. All tools and equipment shall be maintained in good condition.
2. Damaged tools or equipment shall be removed from service and tagged "DEFECTIVE."
3. Only appropriate tools shall be used for the job.
4. Wrenches shall not be altered by the addition of handle-extensions or "cheaters."
5. Files shall be equipped with handles and not used to punch or pry.
6. A screwdriver shall not be used as a chisel.
7. Wheelbarrows shall not be pushed with handles in an upright position.
8. Portable electric tools shall not be lifted or lowered by means of the power cord. Ropes shall be used.
9. Electric cords shall not be exposed to damage from vehicles (driven over).
10. In locations where the use of a portable power tool is difficult, the tool shall be supported by means of a rope or similar support of adequate strength.
11. Appropriate eye and ear protection shall be used when operating power tools and equipment including chainsaws, grinders, power saws, jackhammers, etc.
12. Tools will be placed in stable areas above the work area with sharp ends away from the trail when not in use.
13. Bicycles are often used for transport to the work area. A bicycle helmet will be worn whenever using a bicycle. Long handled tools will only be transported on a bicycle trailer, not on a pack or carried.

Machinery and Vehicles

1. Only authorized persons shall operate machinery or equipment.
2. If provided seatbelts shall be securely fastened before moving the equipment, vehicle, or any implement.

3. PPE including proper clothing, hard hat, safety glasses, and ear protection shall be worn when operating equipment.
4. Radios or other devices should not limit operator ability to hear others and environmental noises during operation.
5. Loose or frayed clothing, or long hair, dangling ties, finger rings, etc., shall not be worn around moving machinery, power equipment, or other sources of entanglement.
6. Machinery shall not be serviced, repaired or adjusted while in operation, nor shall oiling of moving parts be attempted, except on equipment that is designed or fitted with safeguards to protect the person performing the work.
7. Employees shall inspect trailer tires, safety chains, brake lights and turn signals, and ensure the hitch is locked before towing. While towing, drive slowly and allow additional time and space for stopping.
8. Employees shall drive defensively, safely, and follow all traffic laws.

Specific Equipment Guidelines

Excavator/Skid steer

1. Only trained and authorized people may operate heavy equipment.
2. Visually inspect equipment fluids, tracks, motors, implements, and controls for appropriate levels, damage, leaks, etc. before use.
3. Stop position: The blade and/or bucket will be placed on the ground and any parking brake will be engaged before the operator leaves the machine.
4. Equipment should only be operated from level and stable locations.
5. Equipment should be driven straight up and down hills and never driven on a side-slope steeper than 15 degrees.
6. The operator shall always check behind the machine for people or obstacles before reversing. Never assume the trail behind you is clear, rocks and other obstacles may roll onto the trail behind the machine.
7. Never slew the excavator without looking first checking for people/obstacles in the direction of rotation.
8. Place the excavator blade on the ground whenever operating the bucket to minimize potential for tipping over the front or rotating the tracks unexpectedly.
9. Do not lift heavy loads off the ground over the side of the tracks.
10. Individuals supporting equipment with hand tools shall stay a minimum of 20' away from operating equipment at all times. No one should ever walk or stand behind or below equipment while it is being operated. Do not pass the equipment on the sides of the trail while it is operating. If you need to pass call out to the equipment operator and wait until they place the blade/bucket on the ground in the stop position, deliberately remove their hands from the controls, and motion/tell you to pass. Always pass on the uphill side of equipment. It is your responsibility as the operator to ensure people around you are

aware of these safety protocols.

Power carrier

Operating instructions

1. Only persons trained and authorized by project staff should operate the power carrier.
2. Before operation check for leaks, damage, and clear mud and debris from undercarriage.
3. Check fuel, oil, and hydraulic fluid levels.
4. Familiarize yourself with location of controls (throttle, transmission, clutch, track brakes, dump lever, on-off switch).
5. Set choke on, set throttle to idle, and switch engine to on. Pull starter cord. After starting, turn the choke off. Choke is not needed once the engine is warm. Let the engine warm up for 1-2 minutes.
6. Ensure the dump bed is completely down and secured.
7. Place the unit into appropriate gear. Only use third gear when unloaded on flat ground (like a road). Do not force the shift lever. If it does not want to shift into the appropriate gear, move the unit a few inches forward or backwards in another gear until it shifts easily into the desired gear.
8. Set the throttle to about half of full throttle.
9. To move the unit, depress the clutch lever fully. Do not hold the clutch lever only part way down. Do not shift while clutch lever is depressed and carrier is moving
10. Adjust speed using the throttle and transmission. If the machine is moving too fast, throttle down or change gears!
11. Steer the unit using the track brakes. Remember steering is reversed when traveling backwards.

Safety instructions

1. Do not overload. Do not fill with rock or soil past “step” in plastic buckets. Place the majority of weight in the back of the bucket (towards the controls).
2. Ensure the dump bucket is lowered completely before moving.
3. Stay in first gear when you have a heavy load.
4. Only operate on relatively level ground, especially if you have a load. Do not stop suddenly on a downhill grade as this can shift materials in the bucket or tip the machine forward and dump the contents of the bucket unexpectedly.
5. Do not drive heavy loads down steep grades. Do not back heavy loads down steep grades as the machine may roll over the operator if the clutch/brake mechanism fails.
6. Never stand or walk where you could be crushed by the machine if it tipped. Do not allow others to stand or walk below the power carrier. Keep your distance from others when traveling along the trail.
7. Take care when operating in reverse. The power carrier may pinch you against an obstacle.

8. When you need to pass through an area where people will be below the machine (near a switchback, etc.), stop and warn them before proceeding.
9. Keep hands clear when operating the dump bucket.

Plate compactor

Operating instructions

1. Check fuel and oil before starting work. Place unit on level surface and tilt it forward slightly so the back is approximately 1" from the ground. Open the oil dipstick, the oil level should be flush to the top of the opening. Fill fuel tank with unleaded gasoline (not saw mix).
2. Familiarize yourself with the location of the on/off switch, choke, and throttle controls.
3. For cold starts, engage the choke, set the throttle to idle, and set the on/off switch to on. Pull the starter cord. When the machine is warm the choke is not needed.
4. Let the unit warm up for 30 seconds to a minute at idle before throttling up.
5. Use at or near full throttle. The vibration frequency can be adjusted with the throttle to match soil moisture conditions for ideal compaction.
6. Let the machine do the work! During ideal compaction conditions you should not have to pull or push on the machine for it to move. Do not use in very muddy (ineffective) or very dry and dusty conditions (will clog the air filter and cause engine damage).
7. Do not operate on steep angles for extended periods of time. Level out the machine every 10-15 seconds to ensure proper lubrication of the engine.
8. If you are new to plate compactor operation ask for a demonstration of technique from project staff.

Safety instructions

1. Use proper protective equipment (safety glasses, anti-vibration gloves, ear protection) for operators and people working nearby. Keep ear protection and anti-vibration gloves with the machine when finished.
2. The plate compactor is heavy! Always use 2 people to lift the plate compactor. Do not lift the machine with or near the handle (it is easy to crush a finger if it shifts unexpectedly).
3. Transport the compactor long distances using the power carrier.
4. Keep hands away from moving parts.
5. Do not operate the plate compactor in locations where people are working below you or could get hurt if the compactor left the trail. Treat it like a self powered 170lb rock. If you have to pass through an area where people are working below you, stop and let them clear the area before you proceed.
6. Do not grip the handle or a tow strap tightly.
7. Switch operators frequently and stop immediately if the vibration causes you discomfort in any way.
8. The engine and vibration unit get hot during use.

Chainsaw Safety

**Adapted from the CA State Parks Manual^{5 6}*

The most common and serious type of chainsaw injury involves being cut by the chain. A cut can be caused by unsafe operation of the saw, leading to a kickback. Careless movements or poor footing can cause cuts to the legs or feet. Improperly carrying or handling a saw, regardless of whether it's running, can also cause injury to the hands, face, or neck. Besides the potential to cut, a saw produces poisonous exhaust gas that can impair or injure the sawyer. A running or recently run saw has hot, exposed parts that can burn skin or ignite clothing. Saws also run on a mixture of fuel and oil, which can ignite and explode. Most chainsaw-related injuries can be avoided by the sawyer by using the proper safety equipment and features and following safe operating procedures.

A first aid kit with a quick clot sponge or other first aid device meant to treat severe bleeding is required to be carried by both sawyer and swamper.

Personal Protection Equipment

Anyone operating a chainsaw or working near a running saw is required to wear the following PPE.

Hard Hat

A hard hat will protect the sawyer's head from falling material and provide a degree of protection to the head and face in the event of a kickback. The suspension of the hat should be in good repair and fit the sawyer's head snugly. The helmet shell should be in good repair, free from breaks or cracks, and worn with the brim forward (over the eyes).

Chaps

Ballistic fabric leg coverings protect the front of the legs from cuts in the event of contact with the chain of the saw. Chaps should fit snugly to avoid catching in underbrush, but loose enough to allow free movement of the legs. Chaps should be in good repair, free of large cuts or loose strings. Leg straps should be kept buckled at all times. Both sawyer and swamper should wear chaps.

⁵ CA State Parks Program Policies & Handbooks, https://www.parks.ca.gov/?page_id=25529

⁶ CA State Parks: North Coast Redwoods IIPP, <https://www.parks.ca.gov/pages/1324/files/Appendix%20Q%20%20IIPP%20Program.pdf>

Eye Protection

Securely-fitting, clear eye protection must be worn to protect the sawyer's eyes from smoke, dust, and flying wood chips. Lenses should be shatterproof, not excessively scratched, and keep fogging to a minimum. Prescription glasses with shatterproof or polycarbonate lenses are acceptable.

Gloves

Heavy duty, well-fitting work gloves are vital to protect the sawyer's hands. Gloves are especially important when carrying or sharpening the saw or anytime the bare chain is handled. Gloves also provide a measure of protection from cumulative nerve damage by providing an additional cushion between the hands and the vibrations of the engine.

Hearing Protection

Protection sufficient to prevent auditory damage must be worn when excessive noise is expected on the worksite. Whether the protection is ear plugs or muffs, it must fit well and not interfere with the use of safety glasses or helmet.

Boots

Well-fitting boots suitable to the worksite must be worn to prevent slipping and falling or injury from dropped tools or materials. Boot tops should be high and snug to provide ankle support. Soles should provide traction adequate for the given environment. In most forested settings, caulks or caulked sandals provide the best footing. In extremely wet or muddy sites, heavy rubber boots may be used. Steel toes are optional on leather boots but highly recommended on rubber boots.

Standard Chainsaw Safety Features

The following safety features must be installed on a saw to help protect the sawyer. All safety features must be in place and functional or the saw should not be used.

Hand Guard

This device is attached to the front of the power head to keep the sawyer's left hand from contacting the chain if it slips off the front handlebar. It may be attached to a chain brake.

Chain Brake

When activated, this device stops the chain from turning. It works via a steel band that tightens around the clutch drum to quickly stop the chain from moving. It may be activated either through the centrifugal force of a kickback or by the sawyer's left hand striking the hand guard. Chain brakes should not be used to prevent the chain from turning while starting the saw or to hold a chain stopped on a saw with a defective clutch or idle adjustment.

Chain Stop

This small plastic or aluminum device is mounted on the bottom of the saw, forward of the clutch. It catches the chain and reduces the length of loose chain that may swing back toward the sawyer in the event that the chain breaks or is knocked loose from the bar.

Rear Chain Protection Plate

This plate extends out the right side from the bottom of the rear handle to the edge of the clutch cover. It primarily protects the sawyer's right hand in the same fashion as the chain stop.

Optional Chainsaw Safety Features

Reduced Radius Tip Bar

This saw bar tip has a radius that is narrower than the height of the rest of the bar, which reduces the likelihood of a kickback by reducing the size of the zone at the tip of the bar that causes most kickbacks. It may be of symmetrical or asymmetrical ("banana nose") design.

Low Profile Chain

This chain has cutter teeth of reduced height, which are less likely to catch on an obstruction as they pass around the top of the bar tip, and, thus, are less likely to cause a kickback. It is often incorporated with a guard link.

Guard Link Chain

This chain features a modified depth gauge (tie strap) that provides a smooth surface that protrudes higher than the top of the cutter tooth as the chain rounds the tip of the bar, reducing the chance of a kickback. Guard links reduce the chain's cutting ability and efficiency. It can be a hindrance to bore-cutting.

Kick Guard Nose Protector

This curved attachment can be fixed to the tip of the bar to protect the chain as it passes around the tip. It limits the size of the material that can be cut to less than full bar length, and, therefore, is of limited utility. However, it can be useful for cutting brush or small limbs.

Safe Operations

Never attempt to operate a power saw or brusher unless you have completed an approved training program. PPE and safety features are no substitute for training and experience when operating a chainsaw. All personnel should receive verbal and written instructions on safe operations, and should operate a saw in a variety of situations under the guidance of a qualified sawyer before being authorized to use a saw independently.

General Safety

When operating a chainsaw, follow these procedures for safety:

1. Always inspect a saw for proper assembly and functioning before use.
2. Wear all appropriate PPE and ensure it is in good condition.
3. Use safe handling practices at all times including when starting, carrying, or refueling.
4. Carefully position hands, feet, and body while operating a saw.

Kickbacks

Kickbacks occur when the chain encounters something it cannot cut. If the tooth is traveling along the top half of the bar when it is caught, it forces the saw back in a straight line toward the sawyer. If the tooth is traveling around the upper half of the bar tip when it is caught, it throws the tip up and back toward the sawyer. In either case, the sawyer must be prepared for the kickback or suffer a possibly serious or fatal injury.

Most importantly in dealing with kickbacks is maintaining the proper stance and grip. A proper grip is with the left hand on the front handlebar with the thumb wrapped underneath and the left elbow locked straight. If the saw kicks back, the sawyer can maintain a grip on the saw and control the kickback. The head and body of the sawyer should be kept to the left of the saw bar, so if an uncontrolled kickback occurs, these vital areas won't be hit.

Under most circumstances, regardless of its position on the bar, a cutter tooth is most likely to cut the material it contacts. For this reason, keeping the engine running at a high RPM when cutting and keeping the teeth sharp are important to reducing the potential for a kickback.

Rigging and Griphoists

**Adapted from the CA State Parks Manual^{7 8}*

Rigging has a wide variety of applications in trail work, from removing large logs to constructing bridges. Griphoist brand wire rope pullers allow a trail crew to pack in enormous pulling capacity in a lightweight, compact, highly portable unit. A built-in “overload protection” device makes them very safe. There are a few simple points to bear in mind to keep a Griphoist functioning smoothly

Mainlines

Only the four strand Griphoist brand mainlines available through the manufacturer are constructed to the tolerance needed for smooth operation. Be certain the wire rope is free of kinks, "bird cages," and frays. Keep it clean, or at least clean the wire rope before it passes into the machine.

Clean and Lubricate

A Griphoist is full of small parts that must slide past each other for it to function. Even small quantities of dust, rust, or grit can impair function. Strive to keep the machine out of the dirt and mud as much as possible. Periodically remove side casings from the machine, clean the inside thoroughly with solvent, water or steam, and allow it to dry. After drying, lubricate all bearing surfaces with Extreme Pressure grease and all other surfaces with a light oil. It is impossible to over lubricate a Griphoist.

Shear Pins

Use only the overload shear pins supplied by the manufacturer for the hoist. Substituting with nails, drift pins, or drill bits can result in overloading the hoist's safe operating capacity.

Safe Working Loads

Before setting up a rigging operation, identify the safe working loads for all the components used in the system including the hoist, wire ropes, nylon straps, clevises, blocks, and wire rope grippers. The safe working load of any component used with the rigging system must not be

⁷CA State Parks Program Policies & Handbooks, https://www.parks.ca.gov/?page_id=25529

⁸ CA State Parks: North Coast Redwoods IIPP, <https://www.parks.ca.gov/pages/1324/files/Appendix%20Q%20%20IIPP%20Program.pdf>

exceeded by the force applied by the hoist or any mechanical advantages used in the system. The failure point in any rigging system must always be the shear pins in the hoist.

Fly Zones

Wire ropes under tension sometimes move quickly. There are zones in any rigging operation in which it is unsafe to stand or work.

Straightening and Line Shock

Any time tension is applied to both ends of a load, as in a high lead with a brake system, the wire rope and the load will shift as tension is applied until they are extended in a perfectly straight line between the anchors. This shift can occur suddenly as the hoist applies more and more force to the load. If the wire rope is caught on an obstruction, such as limb or root, it can suddenly release from that obstruction causing the wire rope to snap upward, sending a sudden shock to the system. This release can also cause the hoist to suddenly jump upward, possibly injuring the operator.

Rolling Load

Whenever a load is pulled across a hillside or down a hill, the possibility exists that the load may roll or slide down the hill suddenly. Such movement may even be the desired effect. When the load takes off downhill, it will take the wire rope with it. The wire rope will swing downhill with the load, possibly injuring anyone in its path until the load stops on its own, reaches the end of the wire rope, or the wire rope wraps around an obstruction. The hoist may also suddenly jump upward or sideways, possibly injuring the operator. Personnel operating the Griphoist must be aware of these hazards and be sure to stand in a safe area relative to the hoist and the wire rope.

The "V of Death"

Whenever a wire rope changes direction at a block, it forms a "V" shape. If the block or anchor should fail, the wire rope and possibly the block will suddenly fly down into this V-shaped area. No one should be allowed in this area while the lines are under tension. If someone needs to cross through the "V" zone, slack the tension on the lines of the Griphoist before entering the zone.

Environmental Hazards

Trail construction and maintenance activities occur in natural environments that may contain hazardous conditions. Potential hazards include plants (poison oak, poison hemlock, etc.) and animals (ticks, bees/yellow jackets, scorpions, spiders, snakes) that may cause injury or illness. Trail workers may need to traverse steep slopes or slippery areas. Trees and limbs may fall. SCMTS employees shall follow the following safety measures to minimize potential for injury.

1. Clean and wash skin and clothing exposed to poison oak as soon as possible after exposure. Avoid poison oak exposure whenever possible. Individuals with high sensitivity to poison oak should avoid activities like cutting or pulling poison oak vegetation or roots.⁹
2. Yellow jacket nests can be encountered in the ground or in stumps, tree cavities, etc. The highest hazard is during clearing before new trail construction, but yellow jackets can be encountered during all phases of trail planning, construction and maintenance. Employees who know they are reactive to yellow jacket bites should carry an epipen with them while working. All employees should have benadryl in their pack first aid kit when working. If a reaction occurs to a sting or bite medication should be taken and 911 should be called for further guidance.
3. Before working in an area, it should be evaluated for loose rocks, snags, hanging limbs, widowmakers, and other hazards that may result from rolling or falling debris. The hazards should be removed safely before starting work, or the work area avoided.
4. Work should not occur in forested areas during very heavy rain or high winds. Hard hats should be worn when working in forested areas.
5. Employees working in areas with high concentrations of ticks should wear permethrin treated clothing and frequently check for ticks during and after work. Bites should be reported to managers and ticks should be saved for disease testing. Any symptoms after a bite should be evaluated by a medical professional.
6. When hiking off-trail scouting new trail routes, employees should wear appropriate footwear with ankle support and aggressive tread. A walking stick or other support is recommended. Take special care when walking on wet logs or sticks, steep or muddy slopes, or around cliffs. Do not travel in areas where a slip or fall could lead to an uncontrolled slide or a drop off of a cliff.
7. When working on trails that are not closed to users, place signage alerting users that work is occurring and be prepared for trail users to enter the work area.

⁹ OSHA Poison Oak ----

Heat Illness

Silica Dust Exposure

Trail work activities may expose workers to silica dust and other airborne contaminants (sawdust, soil borne pathogens, etc.) during trail construction and maintenance. Breathing these materials creates a health hazard and exposure should be minimized by timing of work, using protective equipment, and using engineering solutions for dust control (use of water, dust collection systems, etc.). Exposure to silica dust can cause :

1. Silicosis, an incurable lung disease that can lead to disability and death;
2. Lung cancer;
3. Chronic obstructive pulmonary disease (COPD); and
4. Kidney disease.

The following activities SCMTS staff perform are likely to create exposure to hazardous levels of silica dust or other contaminants:

1. Soil excavation by hand or machine during dry conditions.
2. Transporting and dumping soil.
3. Sweeping or blower use.
4. Jackhammering, sawing, grinding, or drilling rock or concrete.
5. Handling dry concrete, cement, or mortar.
6. Sanding or cutting wood with a power saw.

SCMTS tries to schedule work so that most excavation and soil disturbance occurs in winter when soil is moist. When jobsite conditions allow water should be imported and used during construction activities to minimize dust creation. When trail construction activities create visible airborne dust or sawdust, SCMTS employees should use a dust mask with APF10, especially if exposure will last more than a few minutes. SCMTS provides 3M Aura 9210 NIOSH N95 disposable dust masks to employees and volunteers. It is important that these are worn correctly and provide a proper fit. [How to ensure proper fit](#)

If these masks do not provide a proper fit SCMTS will provide other respirators that can provide a more custom fit.

Poison Oak

Trail work activities may expose workers to poison oak, which contains poisonous sap or oils (urushiol) in the roots, stems, leaves, and fruits as well as in dust or dirt where poison oak oils exist. Urushiol may be deposited on the skin by direct contact with the plant or by contact with contaminated objects, such as clothing, shoes, tools, and animals. **Poison Oak Identification:** Oak-like fuzzy leaves in clusters of three. It has two distinct kinds: Eastern poison oak (New Jersey to Texas) grows as a low shrub. Western poison oak (Pacific Coast) grows to six-foot-tall clumps or vines up to 30 feet long. The leaf of poison oak is usually shiny and varies in color, depending on the season, including red, orange, yellow, and green.

Touching any part of the poison oak plant (leaves, branches, roots, stems) even when dormant may cause a serious rash on the individual. Breathing in airborne poison oak residue can create a health hazard, as the urushiol oil can enter your body systemically. Exposure should be minimized by timing of work, using protective equipment, and using engineering solutions for dust control (use of water, dust collection systems, etc.). Exposure to poison oak can cause :

1. Redness;
2. Rash;
3. Swelling;
4. Blisters;
5. Difficulty breathing if urushiol has entered the body systemically.

The following activities SCMTS staff perform are likely to create exposure to hazardous levels of urushiol:

1. Clearing vegetation and brushing overgrown trails.
2. Working next to or in areas where poison oak grows.
3. Soil excavation by hand or machine during dry conditions.
4. Sweeping or blower use in areas where poison oak grows.
5. Digging in areas where poison oak roots exist.

SCMTS provides staff and volunteers with Tyvek coverall suits as well as dust masks to attempt to minimize exposure to poison oak. Workers should wear long-sleeved shirts and long pants, as well as tucked in boots, and cloth or leather gloves. Barrier creams can be applied to exposed skin to help minimize exposure. Rubbing alcohol can be used to remove oily resin up to 30 minutes after exposure. After working in areas with poison oak present, SCMTS provides dawn dish soap and cool water, known to remove poison oak oils from the skin. It is recommended to not bring any clothing or shoes that has been exposed to poison oak into your

residence, as urushiol can spread from clothing and shoes. Washing clothing and shoes with regular laundry detergent and cool water will help remove urushiol, and prevent the oils from spreading.

Wildfire Smoke & Air Quality

SCMTS staff and volunteers will follow approved [SCMTS Air Quality Safety Policy](#)¹⁰

Ergonomics and Musculoskeletal Disorders (MSDs)

Trail construction and maintenance activities can expose people to risk factors, such as lifting heavy items, bending, reaching overhead, pushing and pulling heavy loads, working in awkward body postures and performing the same or similar tasks repetitively. Exposure to these known risk factors for MSDs increases a worker's risk of injury. [Musculoskeletal disorders \(MSDs\)](#) affect the muscles, nerves, blood vessels, ligaments and tendons.

The following are examples of musculoskeletal disorders that can develop due to work tasks stated above

1. Carpal tunnel syndrome;
2. Tendinitis;
3. Rotator cuff injuries (affects the shoulder);
4. Epicondylitis (affects the elbow);
5. Trigger finger;
6. Muscle strains and low back injuries

SCMTS works to prevent these injuries by ensuring proper ergonomic practices are followed, fitting each job to the individual. This helps lessen muscle fatigue, increases productivity, and reduces the number and severity of work-related MSDs. Staff and volunteers at SCMTS should voice their concerns and suggestions for reducing exposure to risk factors, and report early symptoms of MSDs. SCMTS works to establish corrective action procedures when symptoms of MSDs come on, by providing alternative options for light-duty work and ways to reduce muscle fatigue and disorders listed above.

¹⁰ SCMTS Air Quality Safety Policy;
<https://docs.google.com/document/d/1nRacOUki-ih7hS3eXecfQkBp8gA6VeG8/edit#heading=h.9djcuvihmez>

Communicable Diseases

Valley Fever

SCMTS tries to schedule work so that most excavation and soil disturbance occurs in winter when soil is moist. When jobsite conditions allow water should be imported and used during construction activities to minimize dust creation. When trail construction activities create visible airborne dust or sawdust, SCMTS employees should use a dust mask with APF10, especially if exposure will last more than a few minutes. SCMTS provides 3M Aura 9210 NIOSH N95 disposable dust masks to employees and volunteers. It is important that these are worn correctly and provide a proper fit. [How to ensure proper fit](#)

SCMTS staff and volunteer supervisors will review [surveillance and estimated exposure risk](#)¹¹ for all job-sites. In environments with risk of exposure, SCMTS will follow Cal/OSHA guidelines¹².

Covid-19 Response Plan

SCMTS has developed a response plan in the face of the global Covid-19 pandemic to ensure the safety of staff when working during this time. We will work with local authorities to ensure that we adhere to the strictest safety protocol when continuing business operations. These guidelines are also subject to change in the face of new data and will be evaluated as more information becomes available.

Symptoms for COVID-19 include fever/chills and shortness of breath, cough or sore throat. COVID-19 is thought to spread mainly from person to person through coughing or sneezing. It may also be spread when people touch something with the virus on it then touch their mouth or

¹¹ CDC Valley Fever Maps, <https://www.cdc.gov/fungal/diseases/coccidioidomycosis/maps.html>

¹² CA DIR Cal/OSHA Protection from Valley Fever, <https://www.dir.ca.gov/dosh/valley-fever-home.html>

nose. More cases are emerging that suggest the virus can spread by talking/breathing assertively with the right indoor/outdoor conditions in place. This phenomenon appears more prevalent indoors than outdoors. Symptoms usually appear 7-14 days after exposure.

Santa Cruz Mountains Trail Stewardship is responsible for maintaining a safe working environment if staff elect to continue working during this time. Below are the steps we will take to uphold these standards:

1. Workers will stay home when they are sick – If a worker is experiencing any of the symptoms listed above they must notify their supervisor immediately. Workers should also stay at home if they have been exposed to someone with COVID-19. If it is apparent a worker is experiencing these symptoms, all onsite personnel are required to report this to their supervisor.
2. Workers are required to wash their hands frequently. This is required especially after going to the bathroom, before and after eating, and after blowing one's nose, coughing or sneezing. When hand washing is not possible staff will use an alcohol-based hand sanitizer that contains at least 60-95% alcohol.
3. All staff on the jobsite will practice proper social/physical distancing. Staff are no longer allowed to carpool together to the jobsite. During this time we will not gather in groups over 5 people and keep a minimum of 6 feet distance between each trail crew member. Always maintain at least 10 feet of distance during physical exertion. Staff are encouraged to be situationally aware of the wind direction and their breathing and to not direct their breathing/conversation assertively in the direction of fellow workers without covering their face. If one must be closer than 6' to their fellow worker to perform a task, they must use a bandana to cover their mouth and nose. When eating lunch workers must keep a distance of at least 10 feet between one another. To ensure the safety of everyone on the job site workers are encouraged to cover their cough or sneeze with disposable kleenex, handkerchief, or use the inside of your elbow.
4. Proper PPE is required while on the job site at all times. Tool handles and equipment operating surfaces should be wiped down at lunch and at the end of the work day. Workers should do their best to minimize the sharing of tools and the heavy equipment between wipe down periods. When leaving the job site staff should be mindful of tracking pathogens into the home via shoes and clothing. Do not shake out clothes and wash them separately in warm water with a sanitizing detergent.

All shelter in place requirements will be adhered to and work will not take place at any work sites until written permission is given by the governing agency. Management will notify staff if any of these protocols need to be modified and new guidelines will be put in place to reflect these changes.

References & Continued Reading

1. CA State Parks Program Policies & Handbooks,
https://www.parks.ca.gov/?page_id=25529
2. CA State Parks: North Coast Redwoods IIPP,
<https://www.parks.ca.gov/pages/1324/files/Appendix%20Q%20%20IIPP%20Program.pdf>
3. OSHA Chainsaw Safety,
<https://www.osha.gov/sites/default/files/publications/chainsaws.pdf>
4. OSHA Hazards: Poison Oak,
<https://www.osha.gov/etools/sawmills/plant-wide-hazards/health-hazards/poisonous-plants>
5. OSHA Bulletin: Potential for Occupational Exposure to Lyme Disease,
<https://www.osha.gov/sites/default/files/publications/shib021103.pdf>
6. OSHA Alert: Lyme Disease Fact Sheet,
<https://www.osha.gov/sites/default/files/publications/lymefac.pdf>
7. OSHA Heat Illness, <https://www.osha.gov/heat>
8. OSHA Compliance Guide: Silica Dust, <https://www.osha.gov/Publications/OSHA3902.pdf>
9. 3M N95 Fit Guide,
<https://multimedia.3m.com/mws/media/827914O/3m-wear-it-right-aura-particulate-resp-9210-and-9211.pdf>

IIPP Certification

I have read and agree to follow the guidelines established in the Santa Cruz Mountains Trail Stewardship (SCMTS) Injury and Illness Prevention Program (IIPP). I understand that SCMTS values safety above all other concerns while working. I understand that I am encouraged to provide feedback and suggestions on the safety program and to identify and report potentially unsafe working conditions or practices.

Name: _____

Position: _____

Signature: _____

Date: _____