

Tim Walsh
19.651 Work Environment Policy
Assignment 1: Hazard Characterization

INTRODUCTION:

The workplace that is going to be used for this assignment is one associated with a small tree care company from Peterborough, NH. The company, Broad Oak Tree and Shrub Care, Inc., provides a range of tree care services for most of southwest NH. The specific tasks that will be used to assess hazards are tree pruning and removal.

DEFINE THE SITE:

The boundaries for the worksite are a little hard to concretely define. There is no single office or work area, but there are different sites almost daily. There are also the added risks associated with driving to and from the worksite and dump site. The worksite then, on any given day, would include the linear path the vehicles must travel on to and from the site, the client's property and adjacent properties.

The workday begins at a shop, where the vehicles are parked, in Peterborough, NH. The workers pick up the daily work order and drive to the client's property to begin the work. The work is often done on most, if not all of the property, so the basic outline of the worksite would be the client's property boundaries. Due to the nature of the work, the worksite is truly three-dimensional, and the work, and thus the hazards extend above the ground. The practical limit of the height of the hazards would be the top of the trees on or adjacent to the worksite or the top of the crane (cranes are sometimes used during certain tree removal operations.) The truck must be emptied, either on site or off and returned to the shop at the end of the day.

IDENTIFY/CHARACTRIZATION OF THE HAZARDS:

<u>Hazard Type</u>	<u>Description</u>	<u>Characterization</u>
Chemical/IH	Solvent/other exposure	Exposure to chemicals (gasoline, diesel, oils, etc.) could raise cancer or other disease levels. Includes dermal, inhalation, ingestion routes
Chemical/IH	Respirable dust	Exposure to wood dust could raise cancer levels, including other types of dust generated from cutting and chipping wood
Chemical/IH	Dermal-	Contact dermatitis/irritation from handling/contacting wood, carcinogenic effects of dermal exposure to gasoline and other petroleum products
Chemical/IH	Inhalation (Gas, vapor, mist)	Inhalation of exhaust fumes (saw, truck, chipper, other handheld power tools) some exhausts are know to be carcinogenic
Chemical/IH	Dermal-Toxic/noxious plants	Poison ivy, oak, sumac, etc.
Chemical/IH/safety	Stinging insects	Allergic reactions to stinging/biting insects.
Ergonomics/Safety	Awkward postures	Head must be tilted up to look at trees, back bent to pick up things, squatting, kneeling, working with hands above shoulders, heavy frequent lifting or twisting
Ergonomics/Safety	High hand force	Use of certain tools, saws pruners etc. force the worker to use high hand force
Ergonomics/Safety	Repetitive motion	Using hand tools, saw and pruner, require worker to use repeated motions, often coupled with high hand force
Ergonomics/Safety	Hand-arm vibration	Use of chain saws and other power tools
Ergonomics/Safety	Cold/heat exposure	Worker is exposed to whatever environmental conditions exist
Ergonomics/Safety	Slip, trip, fall	Walking/working around the jobsite worker is exposed to poor footing, debris, ice, snow, mud, etc.
Ergonomics/Safety	Struck by	Worker is exposed to a number of struck by hazards: trees or tree portions, tools, equipment, vehicles while working on or near roadways
Ergonomics/Safety	Electrocution	Workers are exposed to overhead and underground energized conductors
Ergonomics/Safety	Cuts/lacerations	Worker uses a number of tools with sharpened edges as well as abrasions etc. from the tree or other items in the workplace
Ergonomics/Safety	Fall from elevation	Much of the work day can be spent above ground level, suspended from ½” climbing lines while working with cutting tools, tree structural integrity is often hard to accurately assess and the trees, or portions thereof can fail

<u>Hazard Type</u>	<u>Description</u>	<u>Characterization</u>
Ergonomics/Safety	Struck against/caught in machinery	Slips while working in the tree can cause a pendulum swing into the trunk or branches, brush chippers can pull workers into or against the machine, truck has dump body that can crush
Ergonomics/Safety	Noise exposure	Potential for permanent threshold shifts due to noise exposure levels
Ergonomic/Safety	Laceration/amputation	Chipper and truck have high pressure hydraulic systems, leaks can damage skin/sever limbs
Ergonomics/Safety	Pinch/crush/bruise/etc.	Chippers and other machines have pinch points and in-running nip points
Ergonomics/Safety	Vehicular accidents	Workers must drive to and from the worksite and often work on or near the street
Ergonomic/Safety	Workplace violence	Worker is exposed to violence from co-workers as well as clients and others (people get very angry when trees are removed!)
Ergonomic/Safety	Bites/scratches from animals	Workers exposed to hazards from animals in the natural environment as well as animals owned by the client
Ergonomic/Safety	Eye/face injuries from flying objects, dust, debris	Chain saws, chippers, etc. propel objects that can enter the eye and/or wound the face and neck region
Ergonomic/Safety	Drowning	Arborists often work near, and some times over water features
Ergonomic/Safety	Asphyxiation	Some situations can cause branches to pin workers to the tree
Ergonomic/Safety	Suspension trauma	If a climber is knocked unconscious while in a harness, or if great pressure is put on the climbing system (a piece of tree gets caught on the climbing line), the blood flow is cut off to the legs, the blood that pools in the lower extremities is toxic and can kill if the blood returns too quickly
Psycho-social	Stress	Stress associated with the hazards, co-worker/client conflicts, weather, demand/control issues, etc.
Psycho-social	Psychological	Stress/shock if a person witnesses an accident of a co-worker