

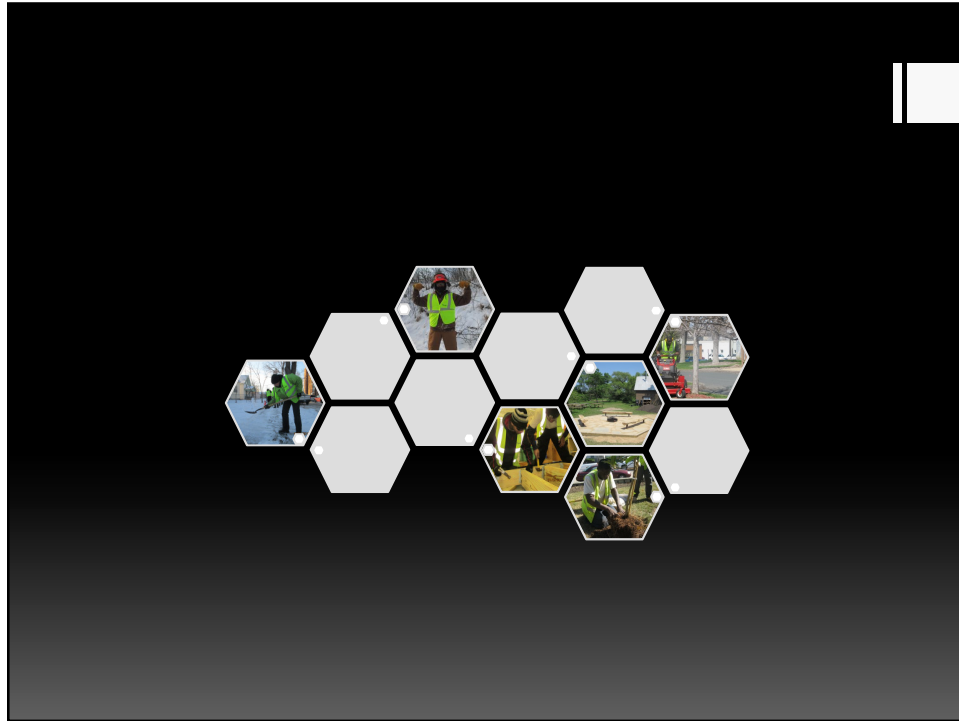
Buckthorn Management: Tools of the Trade

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Corps Project Coordinator



Tree Trust, who are we?

- Non-profit organization based in St. Louis Park, MN
- Founded in 1976
- On the job training with at-risk youth
- Urban forestry
- Landscape construction
- Property maintenance
- Soft skills



General safety recommendations (Rules?) for your buckthorn bust

- Wear long pants
- Closed toe shoes – boots are better!
- Work gloves
- Eye protection – ANSI Z87
- Helmets?
- Have a first aid kit and emergency plan ready!



Handsaws

- Come in a variety of sizes and price points
- Good for people with energy to burn off
- Relatively safe but be careful



Loppers

- Come in a variety of sizes and price points
- Depending on size, may cut branches/trees up to 2" diameter
- Long handles give operator more leverage



Weed Wrench

- Pulls relatively large sized trees out of the ground at the root
- Fun factor!
- Safe



Weed Wrench – The Caveats

- May leave root systems intact to sprout again
- Shake the soil off roots where they were pulled
- Tamp down disturbed soil
- May pull desirable plants adjacent to buckthorn
- Best done when soil is wet but not saturated
- Do not use on a hillside – it will cause erosion!



Chainsaw

- Highly effective and incredibly dangerous!
- Both OSHA 1910.266 logging standard and ANSI Z.133 arboriculture standards require training and personal protective equipment

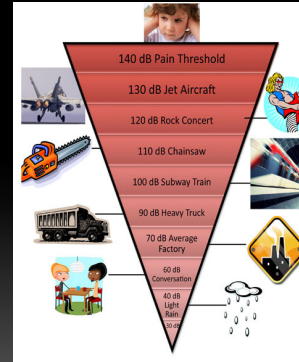


Chainsaws and Personal Protective Equipment (PPE)



Chainsaw – Hearing Protection and Decibels

- OSHA, permissible noise exposure for a chainsaw at 110 decibels is half an hour.
- NIOSH (National Institute for Occupational Safety and Health) permissible noise exposure limit is 1 minute and 53 seconds.
- Wear hearing protection!



Chainsaw – Eye Protection

- Look for Z87 label on the glasses.
- Z87 indicates shatter resistance
- Non-shatter resistant glasses may cause greater damage to eyes during impact



Chainsaw – Ballistic Kevlar Chaps

- Designed up to gum up the drive sprocket
- Not a “bulletproof vest”
- Keep it clean



Chainsaw - Helmet

- System helmets include a face shield and ear muffs
- The face shield does not replace safety glasses
- Improves reaction time while protecting the head from falling objects
- Can be worn with ear plugs



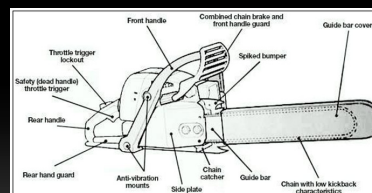
Chainsaw - Boots

- Non-slip soles
- Ankle support
- Cut resistant material



Chainsaw – Safety Features

- Throttle interlock
- Rear hand guard
- Chain brake
- Chain catcher
- Safety chain



Chainsaw – Starting Procedures

- Two points on the saw!
- No drop starts!



Chainsaw – Safety Tips on a Volunteer Site

- Wear the PPE
- Those working around the saw should have PPE
- Set up communication plans
- Other workers/volunteers must be twice the height of the tree away when felling
- Do a site hazard analysis
 - Power lines? Traffic? Targets?

Tree/Site Hazard Checklist	
Location: _____ Date: _____	
Address: _____ Name of Tree Assessor: _____	
Phone: _____	
Overall Tree/Site Data	
Tree Code: _____	Approximate Height: _____
Health: _____	Site Relative to: _____
Trunk Diameter at 4.5m (15'): _____	DBH at 1.37m (4.5'): _____
Mean Form Class: _____	Form Class: _____
Mean Form Class: _____	Form Class: _____
Tree - look for these areas of concern, present:	
Insect damage or borers <input type="checkbox"/> Y <input type="checkbox"/> N Decay <input type="checkbox"/> Y <input type="checkbox"/> N Deadwood <input type="checkbox"/> Y <input type="checkbox"/> N Cankers/cracks <input type="checkbox"/> Y <input type="checkbox"/> N Dieback <input type="checkbox"/> Y <input type="checkbox"/> N Crown dieback <input type="checkbox"/> Y <input type="checkbox"/> N Limb damage <input type="checkbox"/> Y <input type="checkbox"/> N Limb decay <input type="checkbox"/> Y <input type="checkbox"/> N Limb breakage <input type="checkbox"/> Y <input type="checkbox"/> N Root rot <input type="checkbox"/> Y <input type="checkbox"/> N Root collar rot <input type="checkbox"/> Y <input type="checkbox"/> N Root collar decay <input type="checkbox"/> Y <input type="checkbox"/> N Root collar damage <input type="checkbox"/> Y <input type="checkbox"/> N Root collar decay <input type="checkbox"/> Y <input type="checkbox"/> N Root collar damage <input type="checkbox"/> Y <input type="checkbox"/> N	Other areas of concern: _____ _____ _____ _____ _____
Site - look for these areas of concern, present:	
Utility lines and conductors <input type="checkbox"/> Y <input type="checkbox"/> N Buildings <input type="checkbox"/> Y <input type="checkbox"/> N Traffic <input type="checkbox"/> Y <input type="checkbox"/> N Pedestrians/children <input type="checkbox"/> Y <input type="checkbox"/> N Bad footing (steep) <input type="checkbox"/> Y <input type="checkbox"/> N Obstructions <input type="checkbox"/> Y <input type="checkbox"/> N Wind or other weather factors <input type="checkbox"/> Y <input type="checkbox"/> N	_____ _____ _____ _____
Advanced Hazard Management - do we understand where we are working from and what's out there?	
Tree/Root checked for soundness	Tree/Root soundness, test results
Stability <input type="checkbox"/> Y <input type="checkbox"/> N	Response to the rigging methods <input type="checkbox"/> Y <input type="checkbox"/> N
Flaking <input type="checkbox"/> Y <input type="checkbox"/> N	
Horizontal <input type="checkbox"/> Y <input type="checkbox"/> N	
Increase force <input type="checkbox"/> Y <input type="checkbox"/> N	
Test (Rig) for (2) - How does the rigging method?	
Control <input type="checkbox"/> Y <input type="checkbox"/> N	How does the rigging method control the tree's movement? (Check rigging method)
Height <input type="checkbox"/> Y <input type="checkbox"/> N	How does the rigging method control the tree's height? (Check rigging method)
Release <input type="checkbox"/> Y <input type="checkbox"/> N	How does the rigging method control the tree's release? (Check rigging method)
Lower <input type="checkbox"/> Y <input type="checkbox"/> N	How does the rigging method control the tree's lower? (Check rigging method)
Other comments: _____	
This form is provided as a guide only. It is not intended to be used as a substitute for professional judgment. The user assumes all liability for any use of this form. © 2000 Tree Care International.	

Brushcutter

- Like the chainsaw, very efficient but dangerous
- PPE required: Helmet with face shield, hearing protection, safety glasses, steel toe work boots, sturdy gloves, long pants, harness
- Other workers/volunteers must stay 50 feet away from the brushcutter
- Ensure all guards are properly in place



Wood Chipper

- Extremely dangerous piece of equipment
- Requires training – keep volunteers away!
- Required PPE – Helmet with face shield, safety glasses, sturdy work boots, non-gauntlet work gloves, hearing protection
- Avoid bulky or loose clothes that may catch



Wood Chipper – 117 to 125 Decibels!

- NIOSH exposure - 3 to 14 seconds depending on machine and what is being chipped
- WEAR HEARING PROTECTION!



Other – Forestry Cutter

- Pretty much a clear cut



Other – Tree Shear



Gas Powered Tools

- Avoid plastic cans
- Refuel 10 feet from potential sparks (vehicles, smoking areas)
- Start chainsaws or brushcutters 10 feet from refueling area



Herbicide

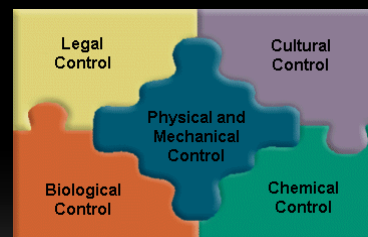
- Regulated by the EPA
 - Requires adherence to label directions – “The label is the law”
 - Requires states to provide training to ensure worker safety – The MDA licenses private and commercial applicators
 - Registered pesticides are tested for their effect on people and the environment when used according to the label



- Razor® Pro is a Trademarked Product of Nufarm Limited 2014

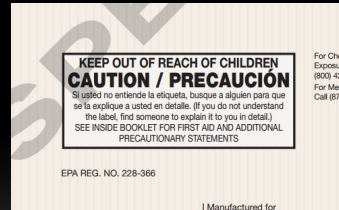
Herbicide and Integrated Pest Management

- Few, if any, biological or cultural controls of buckthorn – goats?
- Mechanical control – weed wrenches, keep knocking it back, etc...
- Chemical control is part of an integrated system



Herbicide PPE

- Chemicals for buckthorn control are given the signal word "Caution"
 - Pesticide product is lightly toxic if eaten, absorbed through the skin, inhaled, or it causes slight eye or skin irritation



Herbicide PPE

- Example: PPE for Razor Pro (Glyphosate) – Goggles, nitrile gloves, long-sleeved shirt, long pants, shoes, socks, and a head covering
- Easy to be extra safe with herbicides labelled "Caution" – Add Tyvek suit and rubber boots for added safety!



Hand Sprayers

- Simple, pressurized sprayers
- Cheap and effective
- Potential for spill when filling – purchase a funnel and measuring cup
- Requires frequent re-fills



Backpack Sprayers

- 4 or 5 gallon units are available
- Replacement parts generally available
- Easy to fill and tank mix
- Can be tiring to use, especially on hillsides



Herbicide Dauber

- PVC wand costing less than \$50 to construct
- Requires a funnel to fill
- Sponge tip allows for precise application on cut stumps
- Good for use near water

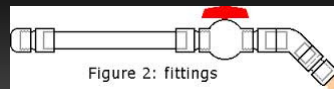
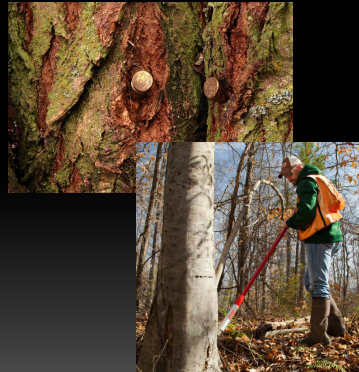


Figure 2: fittings

EZ-Ject

- Lance that injects herbicide filled shells into tree bark
- Natural movement of fluids in tree spreads herbicide
- Extremely easy to use
- Clean system if stored correctly
- Inject one shell per 2 inch tree diameter
- Expensive start up



Herbicide Labels

- Active Ingredient by percentage
- Other ingredients by percentage are protected secrets



Herbicide Labels

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF INHALED	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
<p>PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical-resistance category selection chart.</p> <p>Applicators and other handlers must wear:</p> <ul style="list-style-type: none"> • Long-sleeved shirt and long pants • Shoes plus socks <p>Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. DO NOT reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.</p>	

Herbicide Labels

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Herbicide Labels

MIXING FOR HAND-HELD SPRAYERS

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

SPRAY SOLUTION

DESIRED VOLUME	AMOUNT OF RAZOR PRO HERBICIDE					
	1/2%	1%	1-1/2%	2%	5%	10%
1 Gal.	2/3 fluid ounce	1-1/3 fluid ounces	2 fluid ounces	2-2/3 fluid ounces	6-1/2 fluid ounces	13 fluid ounces
25 Gal.	1 pint	1 quart	1-1/2 quart	2 quarts	5 quarts	10 quarts
100 Gal.	2 quarts	1 gallon	1-1/2 gallons	2 gallons	5 gallons	10 gallons

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, it is suggested that the specified amount of this product be mixed with water in a larger container. Fill sprayer with the mixed solution.

Herbicide Labels

CUT STUMP TREATMENTS

Woody vegetation may be controlled by treating freshly cut stumps of trees and resprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly-cut surface immediately after cutting. Delays in application may result in reduced performance.

For best results, applications should be made during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will CONTROL, PARTIALLY CONTROL or SUPPRESS many types of woody brush and tree species, some of which are listed below:

Alder, Eucalyptus, Madrone, Oak, Reed, giant, Salt cedar, Sweetgum, Tan Oak, Willow.

Cut Stump Herbicide Applications

- Cut-stump method in summer with Razor Pro - 1 part chemical + 1 part water (64 ounces chemical + 64 ounces water)
- Cut stump summer with Razor Pro – 2 parts chemical + 1 part water + 1 part isopropyl alcohol (64 ounces chemical + 28 ounces water + 28 ounces isopropyl alcohol)



Cut Stump Herbicide Applications

- If herbicide cannot be sprayed immediately, leave stumps high
- Don't bother in May or June
- Small stumps may not take herbicide, consider foliar



Foliar Herbicide Applications

- Mix Razor Pro to 2% - 2 1/3 ounces chemical + 125 1/3 ounces water



Herbicide Applications

- Wear your PPE
- Carry an anemometer – watch the windspeed
- Flag your worksite – know your re-entry interval
- Foliar applications – proceed backwards
- Cut stump – spray the cambium
- Document everything



Planting after buckthorn?



Questions?

