



WEST MULTNOMAH
Soil & Water Conservation District

A woman with brown hair, wearing a blue jacket, is smiling and holding a large, tangled pile of green ivy in a forest. The background shows trees and fallen leaves on the ground.

Organic Weed Control

Outline

- Definitions
- Lifecycle & Dispersal Methods
- Setting Objectives
- Tools
- Invasive Plant Management
- Resources



A weed is generally defined as a plant growing where you don't want it to...



- **Non-Native** - "Exotic", "alien", and "non-indigenous" to a region
- **Invasive** – those that spread into areas where they are not native to a degree that causes damage to the environment, the economy and/or human health.
- **Noxious** – regulatory designation; species or groups of species that have been legally designated as serious invasives, injurious to agricultural and/or horticultural crops, natural [habitats](#) and/or [ecosystems](#), and/or [humans](#) or [livestock](#).

Characteristics of invasive plants

- Rapid growth and maturity
- Prolific seed production
- Highly successful seed dispersal, germination and colonization
- Vegetative growth
- Have few pests or diseases
- Growth season/cycle opportunist
- Some allelopathic

Understand the plant: Lifecycles

- **Annuals** - Plants that perform their entire life cycle from seed to flower to seed within a single growing season.



Germinates from February – March



Flowers from June to October

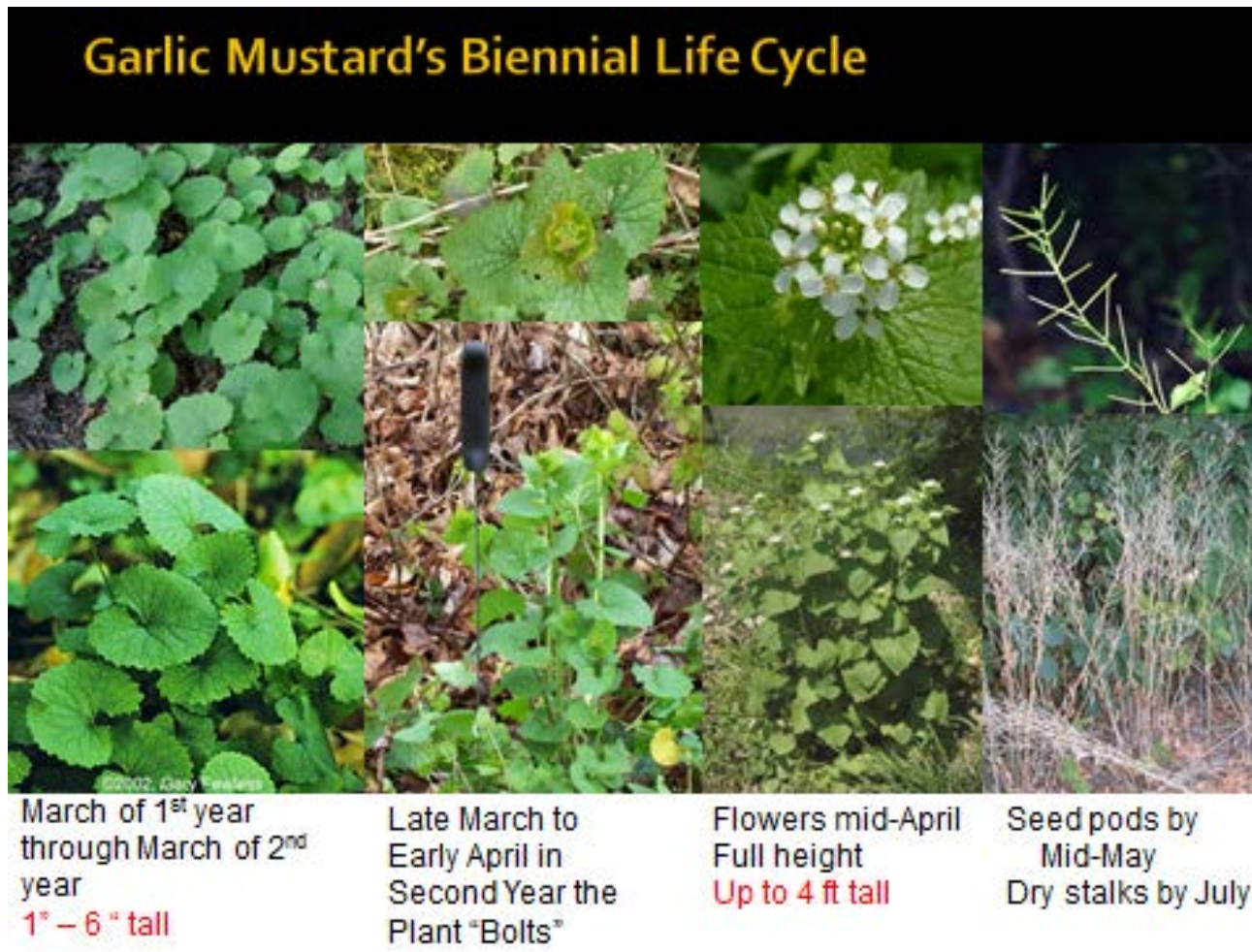


Up to 800 seeds viable for 18 months



Understand the plant: Lifecycles

- **Biennials** - Plants which require two years to complete their life cycle.



Understand the plant: Lifecycles

- **Perennials** - Plants that persist for many growing seasons.



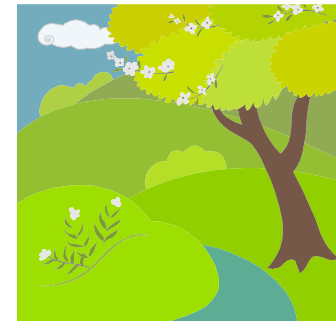
Understand the plant

- **Vegetative Reproduction** - Vegetative reproduction is a form of asexual reproduction in plants. It does not involve flowers, pollination and seed production. Instead, a new plant grows from a vegetative part, usually a stem, of the parent plant.



Dispersal mechanisms...

- Wildlife
- Water
- Wind
- Humans
 - Pets
 - Vehicles & Boats
 - Machinery
 - Planting
 - Seeding
 - Soil disturbance



Objectives & Tolerance Level

- Production (food, timber, livestock)
- Wildlife habitat
- Water quality
- Erosion control
- Recreational use
- Low maintenance
- Aesthetics



Photo Credit: Jamie Stamberger



Weed Management

Prevention is the most effective practice of all!

- Don't plant weeds – watch birdseed, mixes, etc...
- Clean yard equipment & boots!
- Cover disturbed areas
- Pull weeds early – before they go to seed!

Integrated Pest Management (IPM)

Manual & Mechanical

- Mowing, hand pulling, cutting, flaming/burning

Cultural

- Shading, plant appropriate competitive vegetation

Biological

- Parasites, predators, and pathogens; generally not for eradication alone

Chemical

- Spraying, painting, foams



Manual & Mechanical Tools

- Manual: shovels, hoes, hori-hori, loppers, hand-saws, pulaskis...
- Mechanical: steel-blade weed wacker, brush hog, chain saws...



Manual & Mechanical Tools

- Weed Wrench



Photo Credit: <http://www.invasive.org/gist/tools/wrench.html>

Manual & Mechanical

- Flame Weeding



Photo Source: Holcomb Farm, <http://1.bp.blogspot.com/-NvUzAzjI8Q/TpwpQweP-rl/AAAAAAAAAQM/RU1kOsIya24/s1600/flamer-3.JPG>

Livestock

- Grazers (Cows)
 - Grasses
- Browsers (Goats)
 - Broadleaf, Woodies
 - Difficult terrain
 - Fertilizer
 - Intensive
 - Protect desirables!



Photo Credit: Theresa Hogue, OSU,
<http://oregonstate.edu/dept/ncs/lifeatosu/2014/goat-herd-hired-to-remove-invasive-species-from-campus/>

Cultural Tools

- Sheet Mulching
- Solarizing
- Shading/Planting/Cover Crops
- Healthy Soils
- No Overgrazing



Organic Herbicides

- Utilizing a licensed contractor.
- Read and follow the label carefully – label is law!
- Understand toxicity:
 - Grow Smart Grow Safe
<http://www.oregonmetro.gov/index.cfm/go/by.web/id=24199/level=1>
 - MSDS Safety Sheets <http://www.cdms.net/LabelsMsds/>

NonSelective, Post-Emergent Weed controls

PRODUCT NAME	Human Toxicity	Pet & Wild Life	Aquatic Life	Water Pollution	ACTIVE INGREDIENTS
Bayer Advanced™ Natria™ Grass & Weed Killer	○	○	●	○	ammonium salt of fatty acids
Moderate hazard					
Ace RTU Grass & Weed Killer 2	●	○	○	○	glyphosate
Eliminator Weed & Grass Killer II RTU	●	○	○	○	glyphosate
HDX™ Weed & Grass Killer Ready-To-Use	●	○	○	○	glyphosate
Ortho® Basic Solutions™ Weed & Grass Killer RTU	●	○	○	○	glyphosate
Ortho® Total Kill® Brand Weed & Grass Killer RTU	●	○	○	○	glyphosate
Roundup® Poison Ivy Plus Tough Brush Killer RTU	●	●	○	●	triclopyr TEA (triethylamine salt) , glyphosate
Roundup® Sure Shot® Foam	●	?	○	○	glyphosate , pelargonic acid (nonanoic acid)
Roundup® Weed & Grass Killer RTU Plus	●	?	○	○	glyphosate , pelargonic acid (nonanoic acid)
Roundup® Wild Blackberry plus Vine & Brush Killer	●	●	○	●	glyphosate , triclopyr TEA (triethylamine salt)
Ultra Kill™ Weed and Grass Killer	●	○	○	○	glyphosate
WorryFree® Weed & Grass Killer	○	○	●	○	d-limonene (limonene)
Eliminator Weed & Grass Killer Concentrate	●	○	○	○	glyphosate
Eliminator Weed & Grass Killer Super Concentrate	●	○	○	○	glyphosate

Organic Herbicides

- Inputs Review: Organic Materials Review Institute (OMRI) or WA Dept. of Ag (WSDA)



Organic Herbicides

- Clove Oil
- Citrus Oil
- Acetic Acid (10-20%)
- Cinnamon Oil
- D-limonene
- Lemongrass Oil

Table 1. Broadleaf (pigweed and black nightshade) weed control (% control at 15 days after treatment) when treated 12, 19 or 26 days after emergence.

	-----Weed age-----		
	12 Days old	19 days old	26 days old
GreenMatch Ex 15%	89	11	0
GreenMatch 15%	83	96	17
Matran 15%	88	28	0
Acetic acid 20%	61	11	17
WeedZap 10%	100	33	38
Untreated	0	0	0

Table 2. Grass (Barnyardgrass and crabgrass) weed control (% control at 15 days after treatment) when treated 12, 19 or 26 days after emergence.

	-----Weed age-----		
	12 Days old	19 days old	26 days old
GreenMatch Ex 15%	25	19	8
GreenMatch 15%	42	42	0
Matran 15%	25	17	0
Acetic acid 20%	25	0	0
WeedZap 10%	0	11	0
Untreated	0	0	0

Tables source: W. Thomas Lanini is Cooperative Extension Weed Ecologist, Department of Plant Sciences, UC Davis. 2012.

http://ucnfanews.ucanr.edu/Articles/Feature_Stories/Organic_Herbicides_-_Do_They_Work/

Organic Herbicides

- Corn Gluten Meal (CGM) – pre-emergent?
 - OSU & UC Davis trails question efficacy
 - Concerns about nitrates leaching

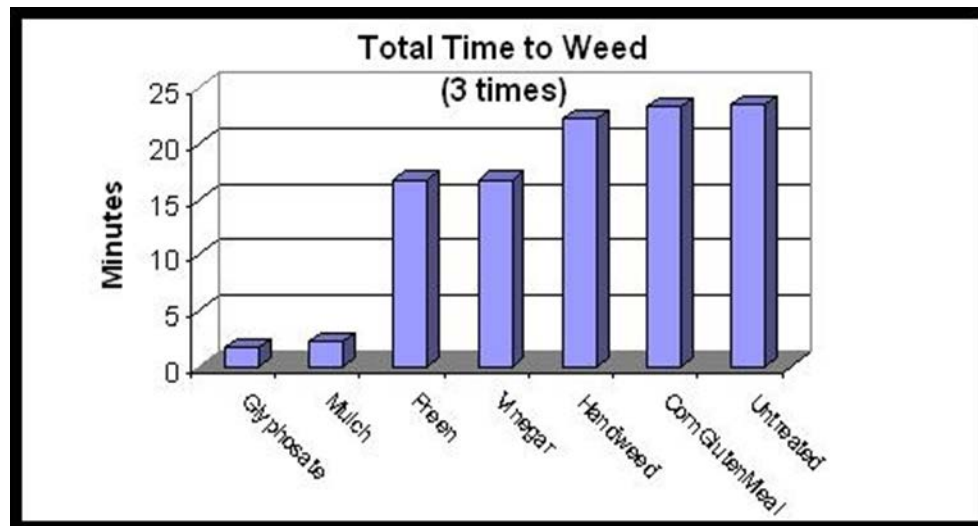


Figure 2. Time needed to weed a landscape beds that were treated with the shown materials.
UC Davis. <http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=6498>

“Organic” Homemade Herbicides

- Boiled water
- Household Vinegar (5%)
- Soap
- Salt – just say no!



Australian Centre for International Agricultural Research, http://aci-ar.gov.au/files/mn-159/s3_soil-salinity.html

Potential scenarios

- **Invasive Forbs:** Digging > solarizing or sheet mulching> flaming, digging or spray regrowth>mulch & plant
- **Invasive Shrubs:** Mow or browse > dig up roots> dig up regrowth>mulch & plant
- **Invasive Vines:** Treat climbing vines first>dig up roots>dig up regrowth>mulch & plant
- **Invasive Trees:** Dig, pull, weed wrench or stump grind > dig or pull seedlings>mulch & plant

Proper disposal of INVASIVE weeds

- Grey area...
- Put fresh noxious and perennial weed materials in seed or with bulbs in your garbage
- Don't toss weed material into natural areas
- Composting depends...





Lesser Celandine (*Ranunculus ficaria*)

Ranunculaceae

- **LOOK FOR:**
 - Dark green, shiny leaves
 - Yellow flowers with eight petals
 - Pale colored blublets on stem
- **WHEN**
 - March through May



Photo: Tania Siemens

USE CAUTION

- *Caltha palustris* (marsh marigold) = colored sepals
 - *Ranunculus ficaria* = sepals and petals
- So if it looks like it DOESN'T have sepals, it's *Caltha*.



Shining Geranium

Geranium lucidum Family Geraniaceae

Red stems

Tiny
pink-purple
flowers

Leaves have
waxy sheen

Shiny, round, obtusely lobed leaves
that turn red toward the end of
summer.

Flowers from spring until late July.





Herb Robert

(Geranium robertianum)



**Deeply dissected
leaves that turn
red in the fall**

**Emits odor when
crushed**

Sticky feel



Himalayan/Armenian Blackberry (*Rubus discolor/armeniacus*)

- Perennial
- Reproduces by seed and roots
- Doesn't grow as well in shade



(family Rosaceae)

Evergreen/Cut Leaf Blackberry (*Rubus laciniatus*)

- Perennial
- Up to 15 feet tall; canes to 40 feet long
- Small, white to pinkish flowers with five petals
- Large, black berries
- Has deeply incised leaflets





Ivy (*Hedera hibernica, helix & colchia*)

Araliaceae (ginseng family)

- Perennial
- Woody evergreen vine
- Reproduces by seed and roots





Traveler's Joy or Old Man's Beard

(*Clematis vitalba*)

- Perennial
- Woody vine
- Opposite compound leaves
- Small greenish white flowers
- Flower appears white and feathery when seeding



Family: *Ranunculaceae*

Tree of Heaven

Ailanthus altissima
Simaroubaceae
Native to China

- Tall tree to 80 ft with smooth gray bark and large compound leaves
- Leaves are comprised of 11-41 leaflets/leaf
- Flowers are yellow-pink borne in clusters, developing into dry, reddish-brown fruits.
- Fruits are papery-winged w/ a single seed in center.



English Hawthorn

Crataegus monogyna
Rosaceae

- Deciduous shrub or small tree to 15 ft tall with smooth, pale gray bark
- Leaves are 3-lobed, flowers are white and showy, dark red berries
- Stout thorns up to 1 inch!



Become a Weed Watcher!

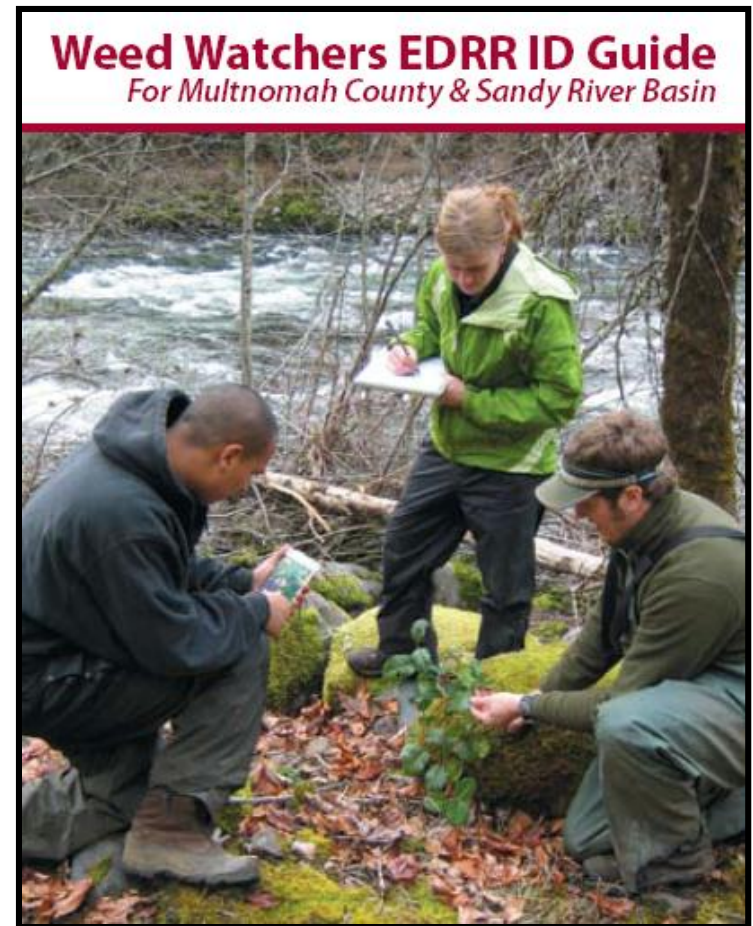
Spring Trainings Coming Soon!

Check CWMA Website:

<http://4countycwma.org/events/>

Multnomah County – May

<https://wmswcd.org/programs/weed-watchers/>



Web Resources

Noxious Weeds of Oregon State (Photos, Range & Description):

<http://www.oregon.gov/ODA/PLANT/WEEDS>

General Info, including control and id:

<http://www.invasive.org>

<http://4countycwma.org/>

<http://www.wmswcd.org>

<http://emswcd.org/weeds>

<http://www.opb.org/programs/invasives>

<http://www.kingcounty.gov/environment/animalsandplants/noxious-weeds.aspx>

<http://www.invasivespeciesoforegon.com>

<http://www.westerninvasivesnetwork.org>

<http://www.metromastergardeners.org/multnomah/>

Reporting:

www.oregoninvasiveshotline.org



Helpful Books

Weeds of the West

Western US Cooperative Extension Services

Tom Whitson, Editor; 2001

Northwest Weeds

Ronald J. Taylor; 2003

Plants of the Pacific Northwest Coast

Jim Pojar and Andy Mackinnon; 1994

Handbook of Northwestern Plants

Helen Gilkey and LaRea J. Dennis; 2001

Gardening with Native Plants of the Pacific Northwest

Arthur Kruckeberg; 2003

Trees and Shrubs for Pacific Northwest Gardens

John Grant, et. al.; 2003

GardenSmart Oregon

Portland BES

Need Plant ID Help?



Multnomah County

Phone: 503–445–4608

Email: mcmastergardeners@yahoo.com

Address: 2701 NW Vaughn St. Suite 450 Portland, OR 97210

Hours: 10 AM – 2 PM, Monday – Friday

THANK YOU!

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