Get Connected: Lessons shared from the PNW-Garlic Mustard Working Group

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WEST MULTNOMAH
Soil & Water Conservation District

What is garlic mustard *(Alliaria petiolata)*?

- Introduced from Europe
- Biennial, herbaceous
- Ecosystem modifier
- Observed invading multiple habitat types
  - West of Cascades
    - Disturbed, Open Sites (urban, roadways, trails)
    - Healthy, Closed Canopy sites (riparian, forests, etc)
  - East of Cascades
    - Riparian corridors, high elevation woodlands

Photos by King County Noxious Weed Control Program


CHAPIN

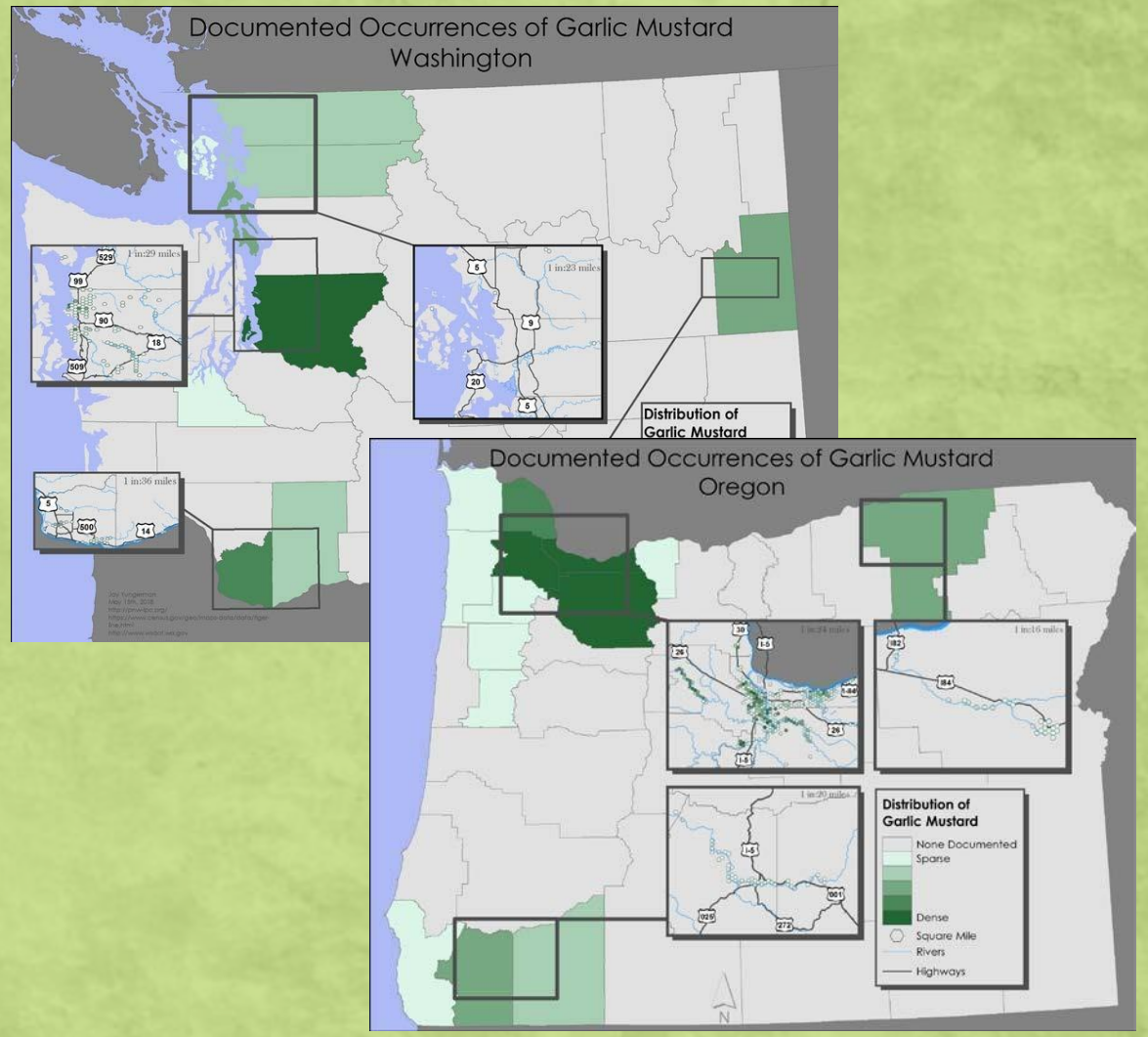
What is the PNW-Garlic Mustard Working Group?

- Established Fall 2014
- Self-organized, “grassroots” collaboration
- OR, WA, BC & AK
- Annual Meetings, List-serve
- Common goals, but different experiences

Photo by East Multnomah Soil & Water Conservation District

Who is a part of the PNW-Garlic Mustard Working Group?

- Soil & Water Conservation Districts
- Noxious Weed Control Boards
- City Natural Resources Staff
- Parks & Utility Districts
- State Noxious Weed Staff
- State Invasive Species Councils
- Western Invasives Network (WIN)
- …and growing



What does the PNW-Garlic Mustard Working Group do?

- Share & strategize!
  - Observations (phenology, adaptations)
  - Best management practices (BMPs)
  - Prevention techniques & protocols
  - Survey gaps
  - Outreach strategies & products
  - Regional maps
  - Management goals
  - …and MORE!

Goals of the PNW-Garlic Mustard Working Group

Prevention & Outreach

Goals of the PNW-Garlic Mustard Working Group

Photos by King County Noxious Weed Control Program

Prevention &
Outreach

What can we do?

Prevention & Outreach

https://tinyurl.com/bootwashing

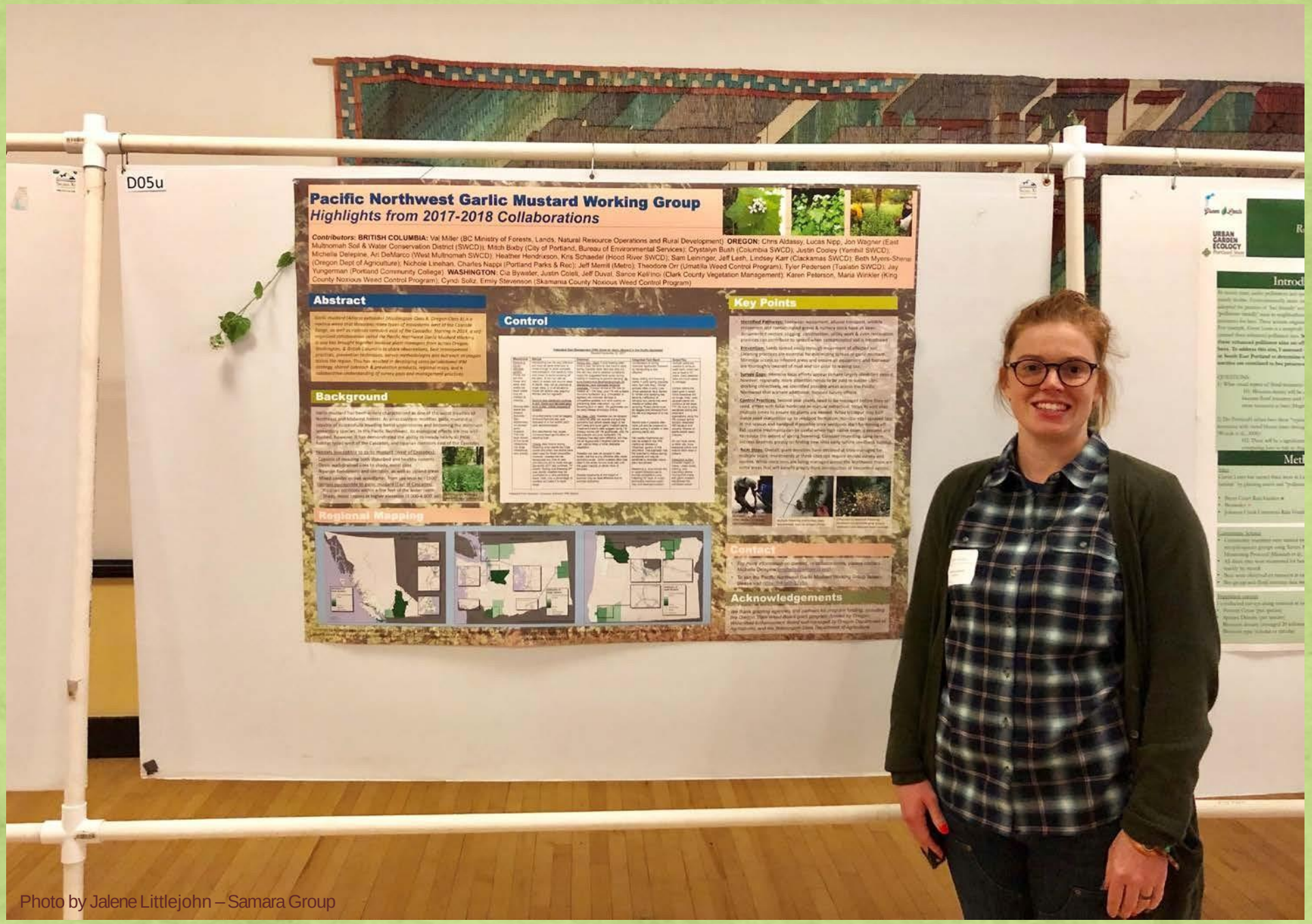
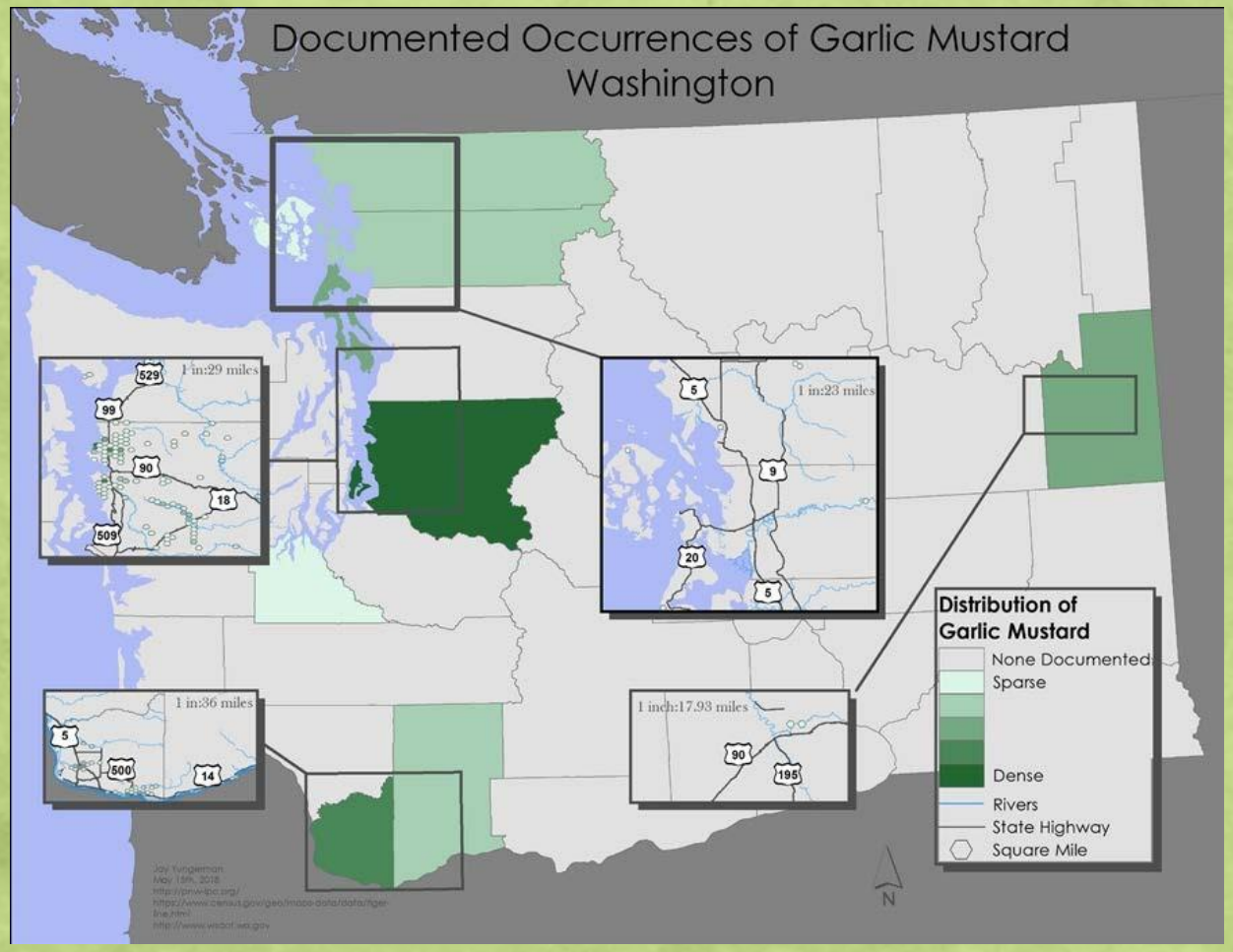
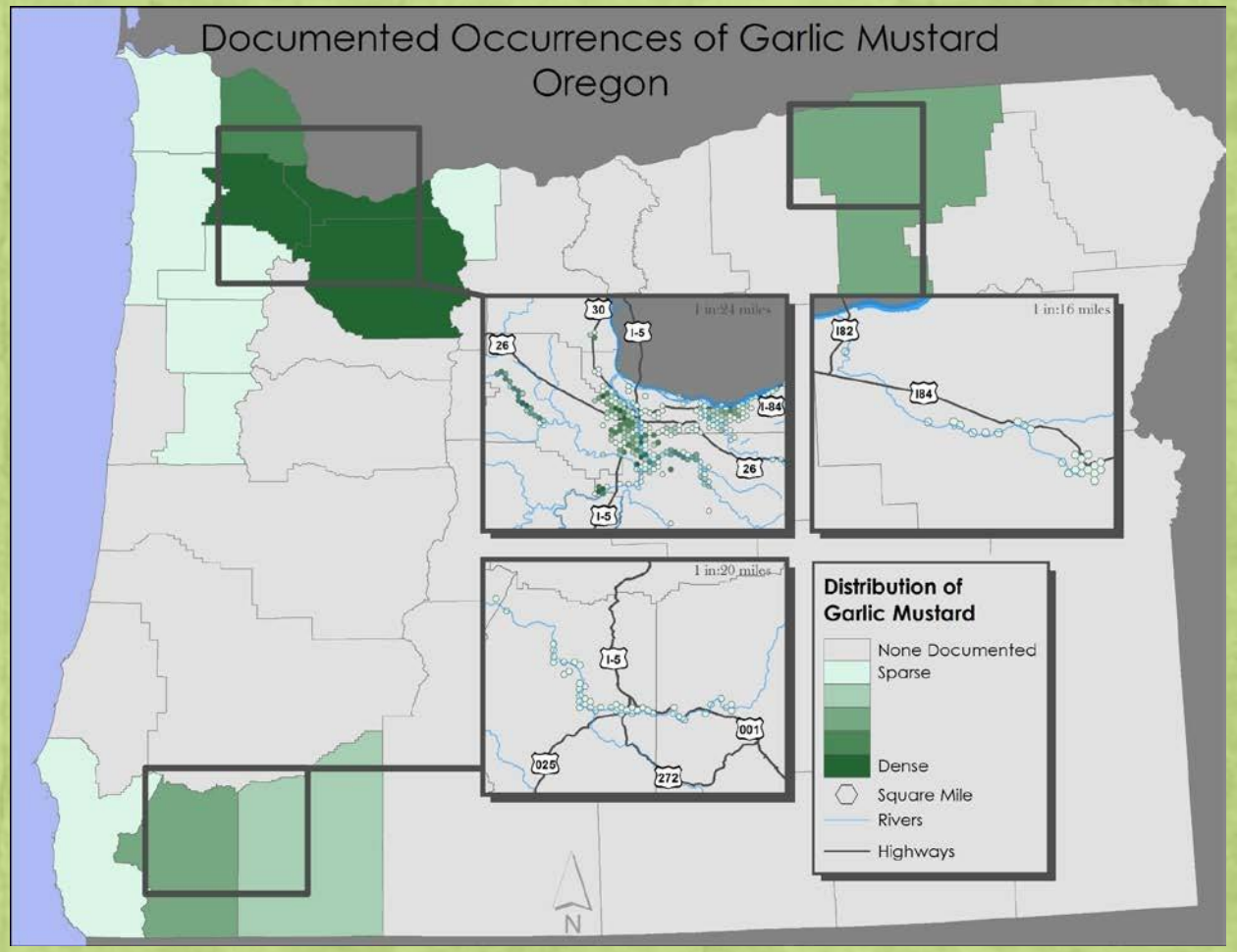


Photo by Jalene Littlejohn – Samara Group

Survey & Mapping

Goals of the PNW-Garlic Mustard Working Group





Maps by Jay Yungerman

Survey & Mapping

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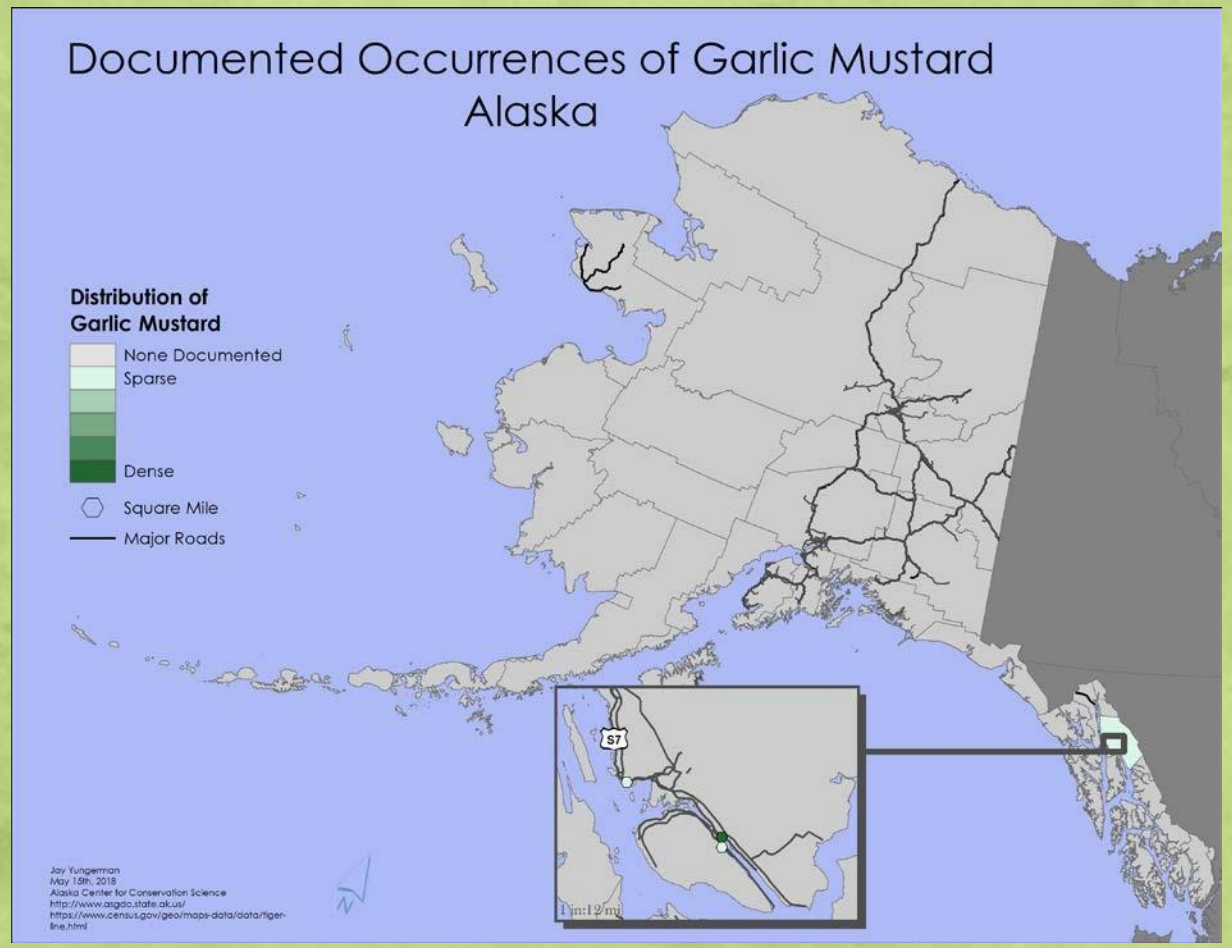
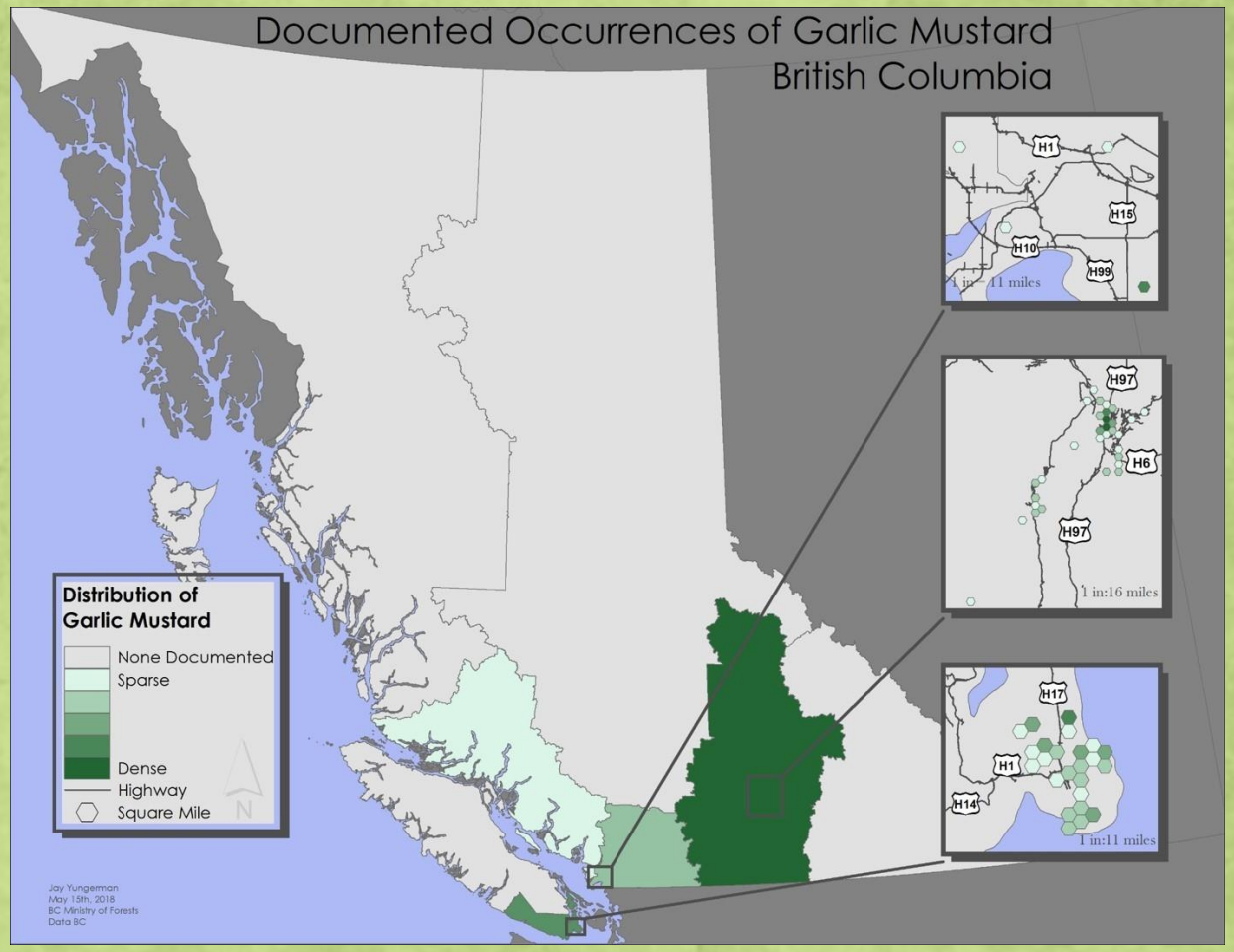




Maps by Jay Yungerman

Goals of the PNW-Garlic Mustard Working Group

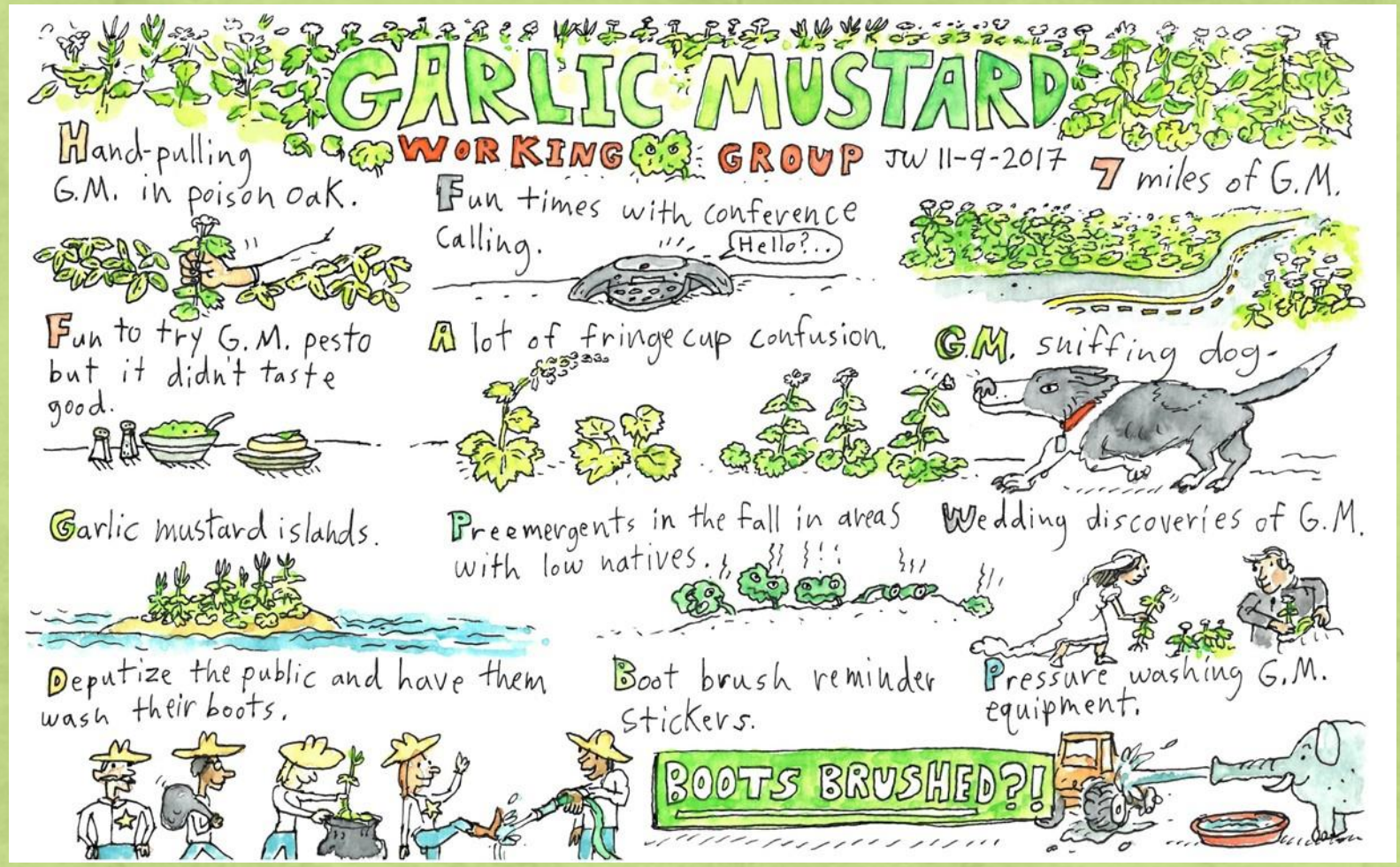
Best Management Practices

Integrated Pest Management (IPM) Guide for Garlic Mustard in the Pacific Northwest
Revised November 22, 2017

Mechanical	Manual	Chemical	Integrated Pest Mgmt	Notes/Tips
Mowing is not an effective control. Plants will still bolt, flower and seed, and additional seed heads may be created by mowing. Mowing after seeds are present (typically, May-September) will spread garlic mustard. This has been shown to turn small infestations into large infestations very quickly.	Handpulling can be very effective but must be done when soil is moist enough to allow complete root extraction. Pull carefully from root crown to avoid breaking off the stem. A hori hori can be useful to loosen soil around base of plants. May not be practical at larger sites, or in all situations. Roots left behind may resprout. Monitor site for regrowth. Second year plants will continue to bolt, flower and set seed even once pulled, unless disposed of properly. All pulled plants must be bagged, removed from the site, and disposed of in the landfill (NOT yard debris/compost). Soil disturbance may cause increased seed germination or seedling flush. Timing: Best time is during flowering when plants are most visible and when root stores have been used for flower production. However, rosettes can be handpulled any time of year, provided the soil is moist enough (generally *NOT* late summer). *1st priority: Bolting and flowering 2nd year plants; rosettes may be controlled on a time permitting basis*. Note, only a percentage of rosettes will make it to adult stage.	Spring (Apr - May): If only treating sites once a year, be sure to visit them in early spring (typically early April-late May but this can vary due to weather conditions). Apply the suggested foliar spray during bolting or flowering to prevent seeding. Be sure flowers and developing siliques (ie seedpods) have adequate herbicide coverage. Triclopyr amine at 2% rate (or Vastlan at 1.5% rate), plus 1% site-suitable non-ionic surfactant (e.g. Competitor or Agridex) will minimize damage to competitive grasses and work quickly on preventing seed maturation. Up until flowering (but no later), 2% glyphosate can be used instead of triclopyr amine. Fall (Sep - Oct): Rosettes can be sprayed in early fall after rain events end summer dormancy but before leaves begin to fall from trees and cover garlic mustard plants. Treatment trials to date suggest using 1% triclopyr amine OR 1% glyphosate, and 1% site-suitable non-ionic surfactant. 1% imazapyr has also been effective, but may not be appropriate if targeted plants are near mature trees or other desirable vegetation. Rosettes can also be sprayed in late winter, but this is only effective after winter dormancy ends. Garlic mustard often dies back in the winter so you must wait until the great majority of plants have re-sprouted. Rosette treatments at the height of summer may be least effective due to summer dormancy.	Combination of spring herbicide application followed by handpulling is very effective. Spray bolting and flowering plants in early spring (typically early April-late May). Revisit sprayed sites in early June (once seedpods have started to harden and spraying has become ineffective) to handpull any plants that were missed or bolted after spraying. Pulled plants must be bagged and removed from the site and disposed of in the trash. Revisit sites if possible after initial pull and be prepared to repeat pulling if smaller or later growing plants bolt. Fall rosette treatments can also be added to this IPM method as directed in 'Chemical' section of this document. This approach has the potential to reduce spring workloads and may be beneficial to desirable native plant recruitment. Reseed (e.g. blue wildrye etc) or replant trees/shrubs to provide competitive cover. Installing >5" layer of mulch, particularly hemlock mulch, may limit seed germination.	Multiple years are needed to exhaust seed bank, which can last at least 5-10 years. Early detected sites are much easier to manage! Control before the plant goes to seed! Once seedpods are no longer milky, even sprayed plants will continue to set seed. TIP: Be sure to spray seedpods during late treatment applications using the 2% triclopyr amine solution described OR handpull and properly dispose of plants before seed matures. Do not move plants, or enter site, once seedpods yellow and mature black seed is present. Prevention is Key! Consider impact of crews – clean boots, clothing, and machinery before moving from areas with garlic mustard plants/seed into uninfested areas!

Start your own working group!

- Umbrella approach to collaboration
- CWMAs, State Invasive Species Councils and State Invasive Species Programs
- Connect with local management efforts
- Remote networking is easier than ever!
- We are all in this together
  - Share observations & management goals, survey strategies, maps, outreach products, and best management practices (BMPs)



Comic notes by Jon Wagner

Link to PNW-GMWG materials: https://tinyurl.com/PNW-GMWG-info

Link to join PNW-GMWG list-serv: https://tinyurl.com/PNW-GMWG-list

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