

Invasive Species & other forest health issues

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What is Forest Health?

- Dead trees
- Disease
- Insects
- Fungus
- Drought
- Fire
- Invasive Species



A healthy forest is a forest that possesses the ability to *sustain* the unique species composition and processes that exist within it. (N.Carolina Forest Service)

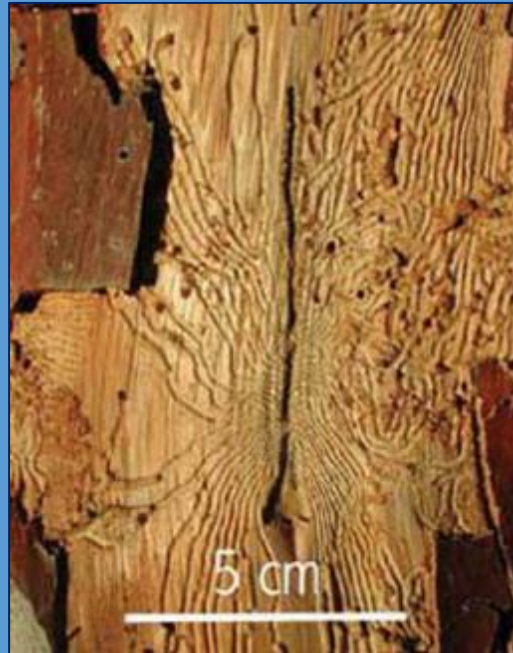
Maintaining Forest Health

- Maintain tree vigor (good growth)
 - Appropriate densities
 - Trees need sun
 - Trees need water
- Diversity of species
 - Appropriate species
- Monitoring
- Control pests or other variables



Bugs

- Cedar bark beetles
- Douglas-fir beetles
- Pine beetles
- Gypsy moth
- Asian longhorn beetle
- Emerald ash borer



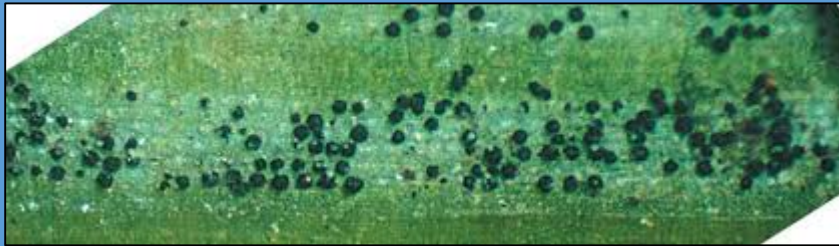
Cedar bark beetle, U of Arizona



*David Cappaert,
Michigan State
University,
Bugwood.org*

Disease

- Laminated Root Rot (*Phellinus weirii*)
- Armillaria Root Rot
- Swiss Needle Cast
- Sudden Oak Death



Don't assume ailments are insects or disease

What is an invasive species?

- Noxious weeds displace native and desirable plants and wildlife habitat. They also negatively affect timber and agricultural production.
- More than \$80 Million loss to the state's economy



Invasive Weeds

- Or. Dept. Agriculture Noxious Weed List
- Soil and Water Conservation Districts
- Early Detection Rapid Response (EDRR)
 - Regional Priorities
 - Species that can still be contained
 - Cooperative Weed Management Areas
- Oregon Invasive Species Hotline – Report sightings
 - Oregoninvasiveshotline.org

EDRR Weeds - locally

- Gorse
- Giant hogweed
- Garlic mustard
- Yellow archangel
- Lesser celandine
- Bamboo



Why manage invasive weeds?

- Effects on forest growth
- Impact on native diversity
- Prevent spread
- You can start immediately



Integrated Pest Management (IPM)

- Coordinated process
- Most appropriate methods
- Environmentally sound
- Economically sound
- Based on seasonality
- May combine mechanical, chemical, biological, and cultural practices



Groupings of Weeds

- “Sun loving”
- “Shade tolerant”
- “Abundant seed producers”

“Sun Loving” Weeds

- Abundant flowers
- Abundant seeds
- Can't live/don't thrive in shade
 - Blackberry
 - Scotch broom
 - Reed canary grass
 - Thistle

Blackberry (Himalayan/Armenian)

- Treat in the fall
- Spray with triclopyr in year 1
- Spray again in year 2
- Cut/mow in the middle if canes are heavy
- Plant trees/shrubs that will shade blackberry



Cutting



Scotch broom

- Cutting large plants ($> \frac{1}{2}$ " diameter) during drier times of year (mid July – September)
- Smaller plants can be pulled by hand or with weed wrench
- Mowing
 - Spreads or “awakens” seeds
 - Early season mowing likely result in sprouting
- Spray in the fall, not while flowering







“Shade tolerant” Weeds

- Thrive in shade
- Reproduce by seed and vegetative
- Less responsive to cutting/mowing
 - English holly
 - Ivy (English, Irish, Persian)
 - Laurel (English, cherry, spurge)

English holly



- Sprouts vigorously
- Usually need strategy that includes herbicide
- Triclopyr on the stump within minutes of cutting
- *This approach is good for*
 - Hawthorn
 - English laurel
 - Maple
 - Several other tree species

Ivy

- Cut vines off of trees – **highest priority**
- No need to remove vines above your cut
- Clear ivy from around base of trees
- Monitor annually



Spraying ground ivy

- Recommended when you have an acre or more
- Mixing instructions (the order matters!)
 - 75% water
 - 2% Triclopyr amine (shake)
 - 4% Glyphosate
 - 2% Competitor (veg. oil based)
 - Dye and remaining water
- August-October
 - Warm weather, but not hot



Hand pulling ground ivy

- Get the roots
- Use carpet rolling method
- Labor intensive
- Focus your work



What will come in next?

- Natives
 - Are they already present?
- Re-invasion
- New invasion





Herb robert



Lesser celandine

Invaders



Shiny geranium

Garlic mustard



Yellow archangel



“Abundant Seed Producer” Weeds

- Abundant flowers
- Abundant seeds
- Seed multiple times in a year
- Very small seeds
- Sun loving and shade tolerant
 - Garlic mustard
 - Geranium
 - Hawkweed
 - False brome
 - Yellow archangel

Cultural Practices

- Boot brushes
- Contractor equipment
- Weed free seed/soil
- Leather shoe laces



“Abundant Seed Producer” Weeds

- Don't walk through them when seeding/flowering
- Hand pull
- Spray early – wait for leaves to enlarge, but spray before flowering
- Ground cloth

Plan of attack

- EDRR weeds – Report
 - Take a photo and send to SWCD
- Abundant Seed Producers – get them when they're just a small patch
- Shade tolerant – They will not go away on their own
- Sun Loving – Treat these too, but they can be shaded out eventually