



***Forest Service Weed
Management
Accomplishments & Challenges***

Pacific Northwest Invasive Plant Council

November 2013

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Overview

- Forest Service Weed Management in the PNW
 - New National Policies
 - NEPA & Herbicide Effects Analysis
 - Prevention & Treatment Standards
- Successes
- Challenges

National Strategic Framework



- August 2013
- Provides broad direction *across all FS Staff Areas and agency programs*
- Prevention
- Detection
- Control & Management
- Restoration & Rehab

- Tasks under each Element
- 5-yr reporting on accomplishments



**STOP INVASIVE SPECIES
IN YOUR TRACKS.**

PlayCleanGo.org



FS Invasive Species Manual & Handbook

- New FS Manual released in 2011
 - Broad agency direction and responsibilities
- Corresponding FS Handbook due 2014
 - Contains specific direction to the field on how to manage invasive species

Invasive Plants in PNW Region

- Regional EIS in 2005
- 9 forest NEPA docs since, 3 in progress
- What does it take to be able to treat weeds?



Scotch broom in plantation

Risk Assessment

- **Hazard Identification** – “How toxic is it?”
- **Exposure Scenarios** – “How much exposure will occur?”
- **Dose-Response** – “If an animal is exposed, what will happen?”
- **Risk Characterization** – “Are we likely to have any adverse effects when we use it?”

Hazard Identification

- Herbicides vary widely in toxic potential, depending upon target
- Acute No-effect levels:
 - Clopyralid (Transline): bird = 670 mg/kg
 - Picloram (Tordon): fish = 0.04 mg/L
- Need to ID these for several non-target species

Exposure Assessment

- Quantitative estimate of exposure
- Calculated using exposure scenarios.



Sample scenarios....

- A mouse is directly sprayed over 50% of body and 100% absorption occurs over one day. (Predators eat this mouse....)
- A goose eats contaminated grass and one day's diet is 100% contaminated.
- Broadcast spray of 10 acres on 10% slope immediately adjacent to stream; on sand or clay, with 250 inches of rain/yr; sparse grass; no uptake.

Dose-Response



- What happens?
- The effects we focused on were **SUBLETHAL** (e.g. weight loss, liver, reproduction).

Risk Characterization

- Sometimes a more toxic herbicide or NPE has less risk because of how it is used or diluted, or it's environmental properties.
- Selective herbicides may pose higher risk to herbivorous animals than non-selective ones.

Typical Application Rates

Animal / Scenario	Glyphosate	Imazapyr	Triclopyr	2,4-D
Contaminated Vegetation				
large mammal	--	--	C	A/C
large bird	--	--	A/C	A/C
Contaminated Insects				
small mammal	--	--	--	A/ C?
small bird	C?	--	A/ C?	A/ C?
Contaminated Prey				
fish-eating bird	--	--	--	--

Forest & Project Standards

From 2005 EIS:

- 7 Prevention standards
- 12 Treatment standards

Forest Invasive Plant EIS's:

- Sometimes 60 project design criteria!

Successes

- Kicking off and properly signing the Weed Free Forage requirement for all National Forests
- Initiating gravel pit inspections and certifications – over 40 done so far





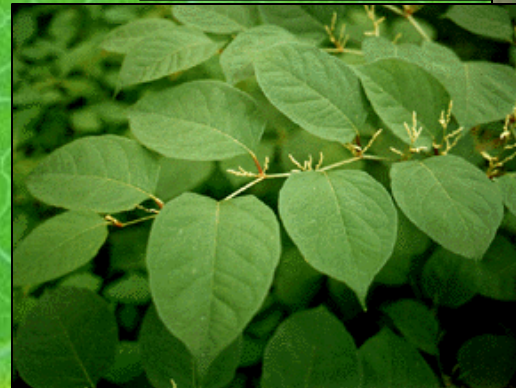
- Installing a weed wash station on the Willamette NF
- Implementing EDRR
- Treating 45,000-61,000 acres
- Contributing to increased snowy plover nesting through European beachgrass control



- Common Crupina contained along shores of Lake Chelan in WA
 - Has not spread in WA
- Yellowtuft alyssum eradication progress in SW Oregon's Illinois Valley
 - Great team effort and promising results

We Face Significant Challenges

- 25 million acres for National Forests alone in OR & WA
- Cumbersome regulations
- Complex requirements
- Inadequate funding
- 500 new infestations/yr



Litigation

- Complete analysis
- Make a Decision
- Allow appeals
- Resolve, or not
- Litigation
 - Wallowa-Whitman NF

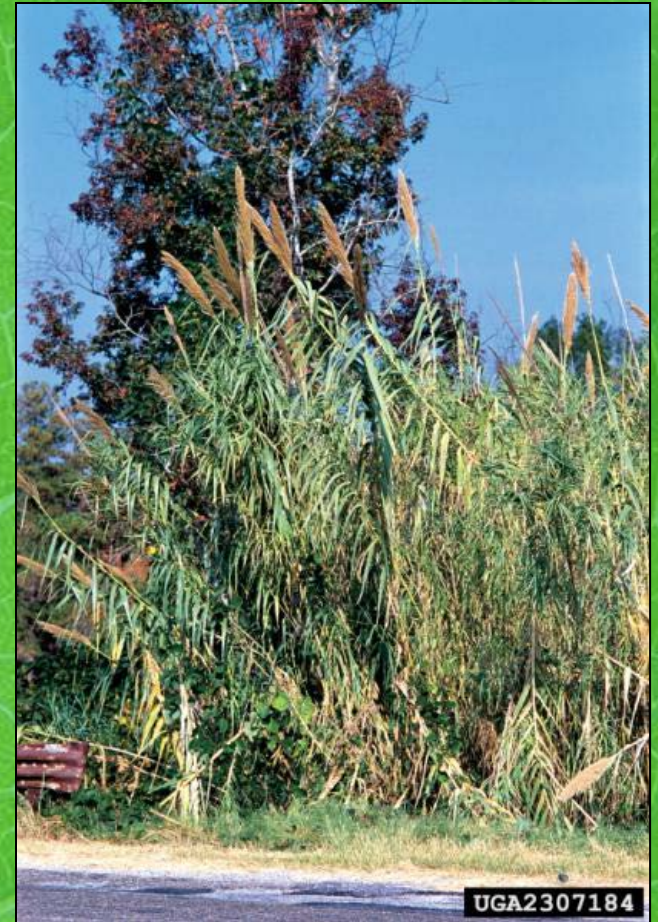


Spread Rate Exceeds Control

- Perhaps 2-3 million acres on National Forests in OR and WA
- @ 10%/year, need to control 300,000 acres / year to stay even
- We are typically treating around 45,000 acres per year...
- And funding often diverted to “higher” priorities at the forest level

An Emerging Challenge

The search for biofuels and other economic uses of invasive plants



Arundo donax

One of our Top Priorities

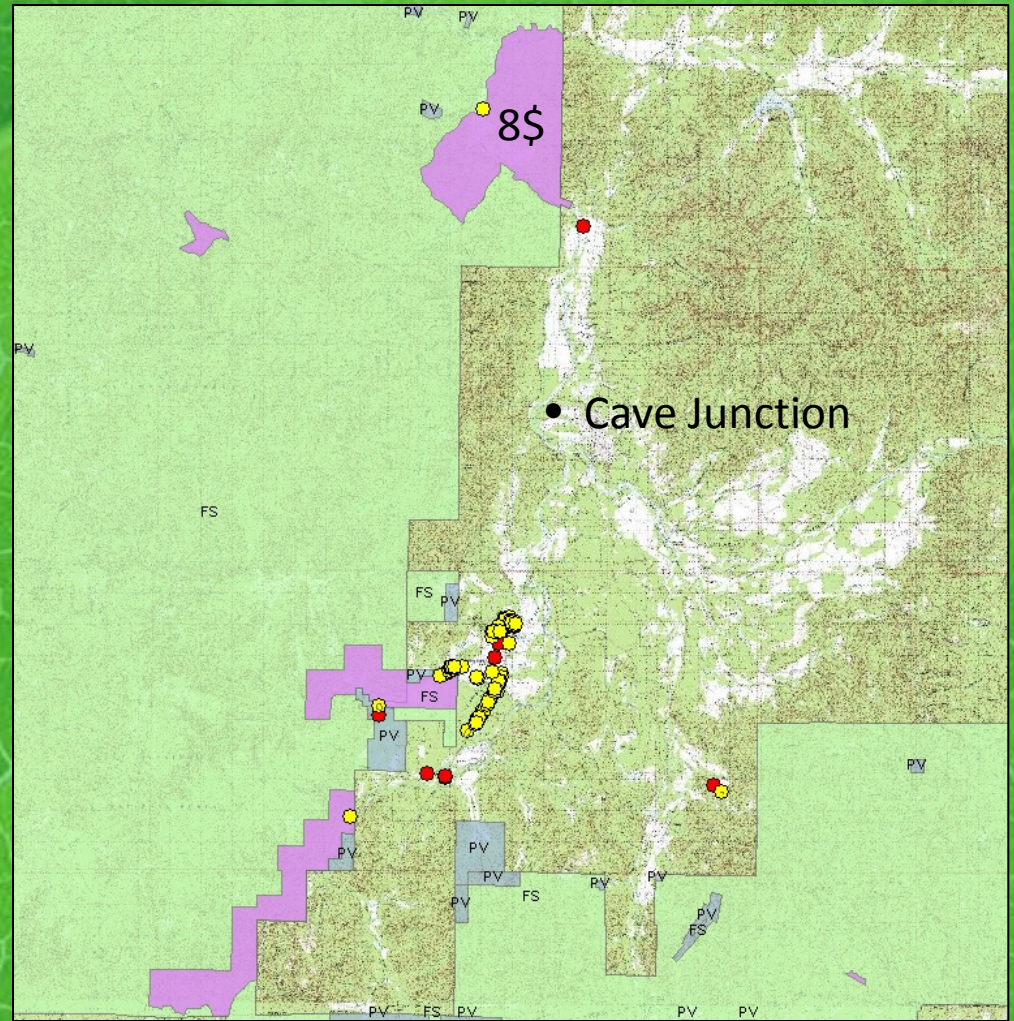
- Yellowtuft alyssum – *Alyssum murale* & *A. corsicum*
- Introduced for “phytomining”
- Listed as noxious weed in 2009
- Now spreading rapidly in Illinois Valley of southern OR
- Threatens rare endemic plants on serpentine soils



Yellowtuft Timeline

- 2002 Viridian planted 9 sites near O'Brien, OR
- 2005 found growing wild and far from planted sites
- 2006 found growing on Forest Service land
- 2007-2008 USFS and ODA document wild populations.
- 2009 *Alyssum murale* and *A. corsicum* listed as Class A noxious weeds in OR
- 2009 - 2010 Large scale control efforts begin

- Map As of 2010
- In 2011, 3,200 ac surveyed
- 65 new wild sites found
- At least 1 outside of Illinois Valley
- About \$100,000 FS funds committed so far



Just a few priority weeds

- Medusahead, Ventenata
 - difficult to treat, changes ecosystems
- False brome
 - spreading exponentially, forest understory, very adaptable to light levels, moisture, elevation
- Garlic mustard, Herb Robert
 - understory, spreading very rapidly
- Hawkweeds
 - difficult to control, spreading rapidly, meadows



- Riparian – Knotweeds, Canarygrass, Blackberry
- Yellow starthistle, knapweeds, thistles – chewing up acres
- Rush skeleton weed – spreading rapidly
- Dalmatian toadflax – waxy, inaccessible areas, understory
- Sulphur cinquefoil – rampant invasion, in wilderness areas
- Yellow floating heart & other aquatics

Conclusion

- We have a huge management challenge for invasive species
- Our processes are complex, time consuming, and expensive
- We have many species that scare us...
- But, we have accomplished amazing work despite challenges and are restoring ecosystems

Questions?

