

Insect Concerns in Regenerated Stands

Not Just the Usual Suspects

Inland Empire Reforestation Council

March 1, 2016

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Just What *ARE* the “Usual Suspects” Anyway?

- **Bark beetles**
 - Pine engraver
 - Fir engraver
 - Western pine beetle



Just What *ARE* the “Usual Suspects” Anyway?

- **Defoliators**
 - Larch casebearer
 - Western spruce budworm
- **Western pine shoot borer**

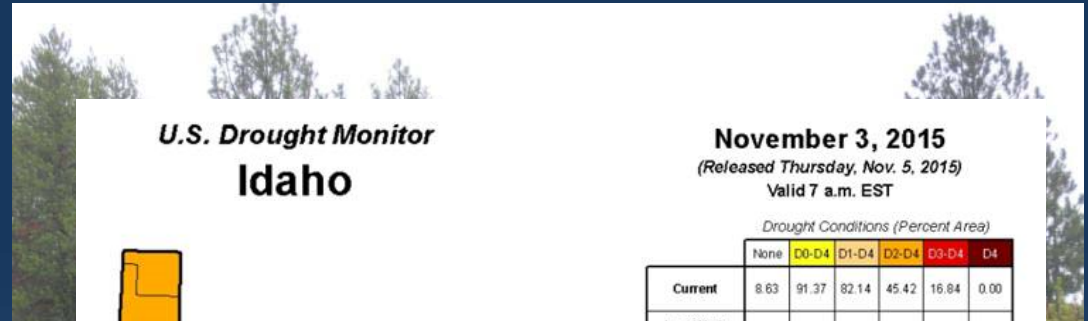


UGA1241594



The Usual Suspects Were Busy in 2015

- I saw a LOT of pine engraver (*Ips pini*) and western pine beetle in young stands last fall
- The drought probably had a lot to do with it
 - Winter logging had something to do with it too...



Ips in Rathdrum

Pile burned in November, 2015-Blanchard



Ips-WPB in Sanders

I was Seeing Some Unusual Things Last Year

- **Secondary bark beetles**

- *Scolytus monticolae* in large AND small DF
- Fir engraver killing very small trees
 - (Drought)

- **Sucking insects**

- Cooley spruce gall adelgid on DF
- Adelgid on small WWP



I was Seeing Some Unusual Things Last Year

- Douglas-fir needle midge in all size classes
- Wood borers in tops of young trees



Keep an Eye Out For These...

- Pine needle sheath miner on ponderosa pine (saw this in 2009 near Kamiah)
- Gouty pitch midge on PP
- Conifer sawflies on plantations



UGA2253011

Drought and Forest Insects

- 2015 was a tough year to be a tree
- Bark beetles typically do better during droughts
 - Especially dense stands or marginal sites
- Spruce budworm does better too
- Trees are under moisture stress

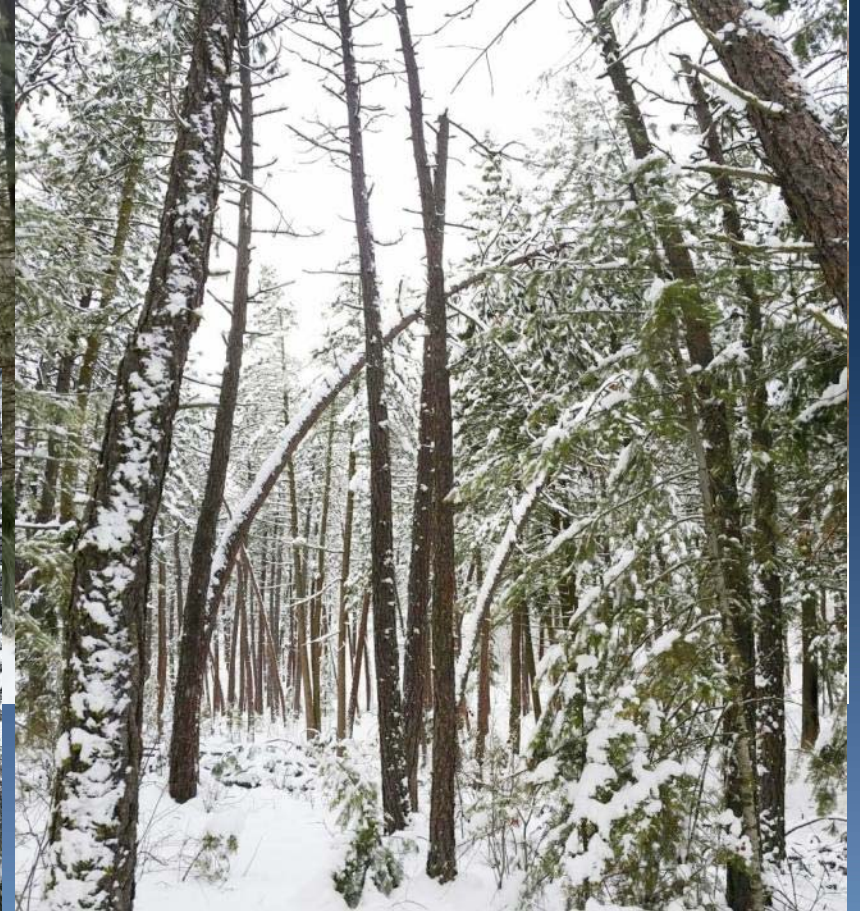


Precipitation (Inches)



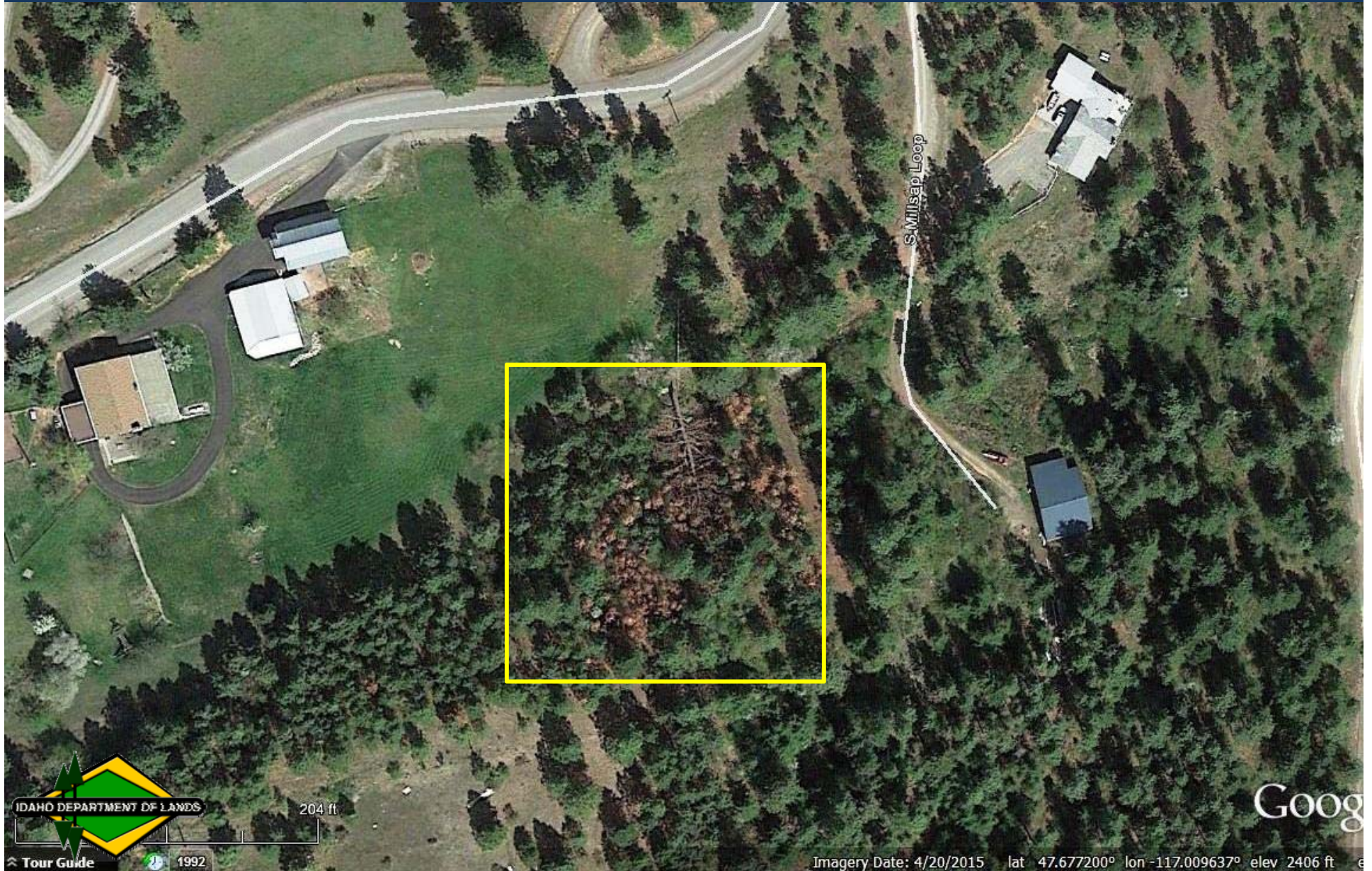
Other Weather Issues to Look Out For...

- Wind Damage
- Snow damage or breakage



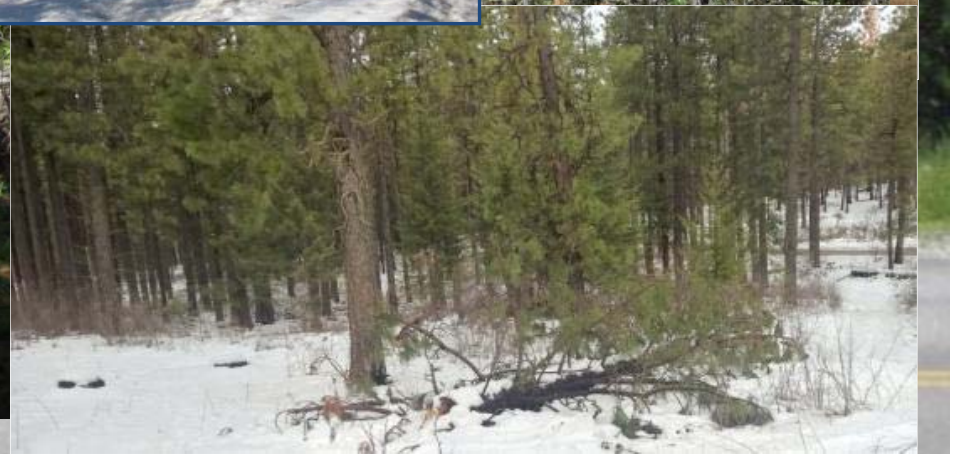
P. Hill, City of Post Falls

Downed Pine Can Lead to Pine Engraver



Lets Start out with the Usual Suspects

- Pine Engraver (*Ips*)
- Overwinters as adult
- Breeds in slash > 3"
 - Can cause problems in most pines (PP, LPP, WWP)
 - Usually preventable
- Small acreage
 - *But IDL gets MANY calls for assistance for this bug*
 - Outbreaks usually related to management or weather



Pine Engraver Management

Pine Engraver

- Wind event, snow load and recent drought could make for an interesting 2016
- It's best to delay management until summer
- Take slash precautions if considering winter logging or spring thinning



Large slash piles



Chip slash

05/26/2010



Burn slash as you go



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Green Chaining is Tricky

- Proper timing is critical
- More green slash must be made available during pupation
- Slash can't dry out too soon
- I saw failure in 2015 during LPP thinning
 - Operator was doing it right



Large Slash Piles Are Probably Best

- Beetles infest the pile in spring (April-May)
- Beetles burrow in
- Logs stay fresh through summer
- Instead of flying off to kill trees
- 2nd generation reinfests the pile in July



Torch it in the fall and problem solved



Large Piles

- Torch it in the fall and problem solved



Large Piles Don't Always Work

Hot, dry summer dried out the pile
and the beetles killed adjacent trees

30 ft dia.

In a normal year, this pile probably would have contained them



These trees were still
alive in January

Western Pine Beetle

- Typically attacks dense stands of ponderosa pine 10" DBH or larger
- I have seen attacks in stands of smaller trees
- Thinning and stress issue



Sanders ID - September, 2015



Sanders, ID, 11/2015



Indian Creek Rd

Mortality apparent in 2013



- **Planted 1985**
 - 10 X 10 spacing
- **Ponderosa pine was the correct species**
 - Gentle southerly aspect
- **30 year old stand was never thinned**
 - BA now almost 200 ft²/A
- **WPB first a problem in 2008 after a 2007 grass fire**



Google Earth photo 6/29/2015

Fir Engraver

We typically think of this beetle killing larger GF

- Have seen it attack all size classes
 - Often in association with root disease
- Match the tree to the site
- Fir engraver responds to stress



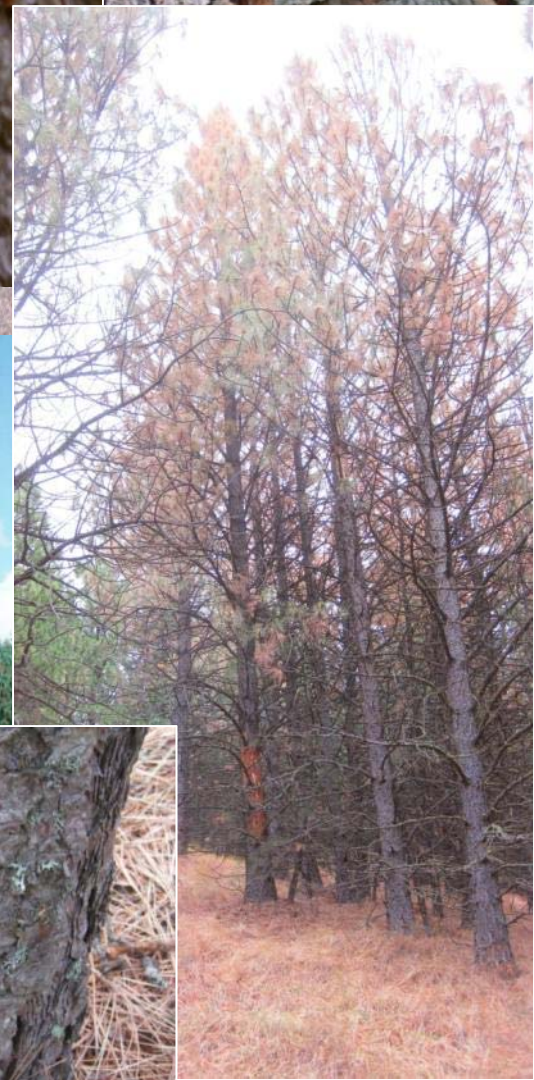
Fir Engraver

- Could be a problem on “advanced regeneration”
- Hard to predict which trees will be attacked
 - Logic dictates it will be offsite GF
- Smaller trees dying recently
 - Drought?
- Match the tree to the site



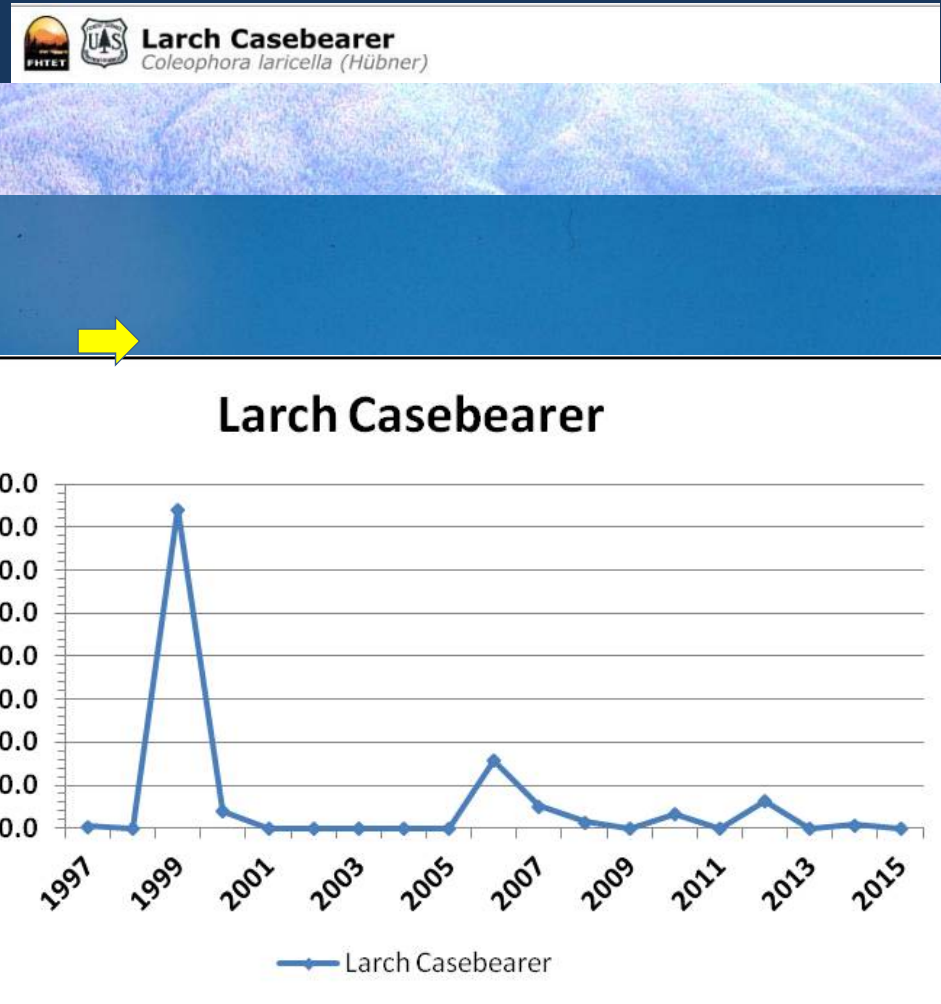
Red Turpentine Beetle

- Not considered a big tree killer
 - All pine species
- Attracted to stress, injury and pruning wounds
 - Can kill pruned WWP
- Attacks along with *Ips* and WPB
 - Drought?



Larch Casebearer

- **Introduced defoliator**
 - Found in St Maries in 1957
- **Caused a lot of issues through 1980's**
 - Parasites introduced starting in 1960
- **Infestations declining over time**
 - Occasional flare ups

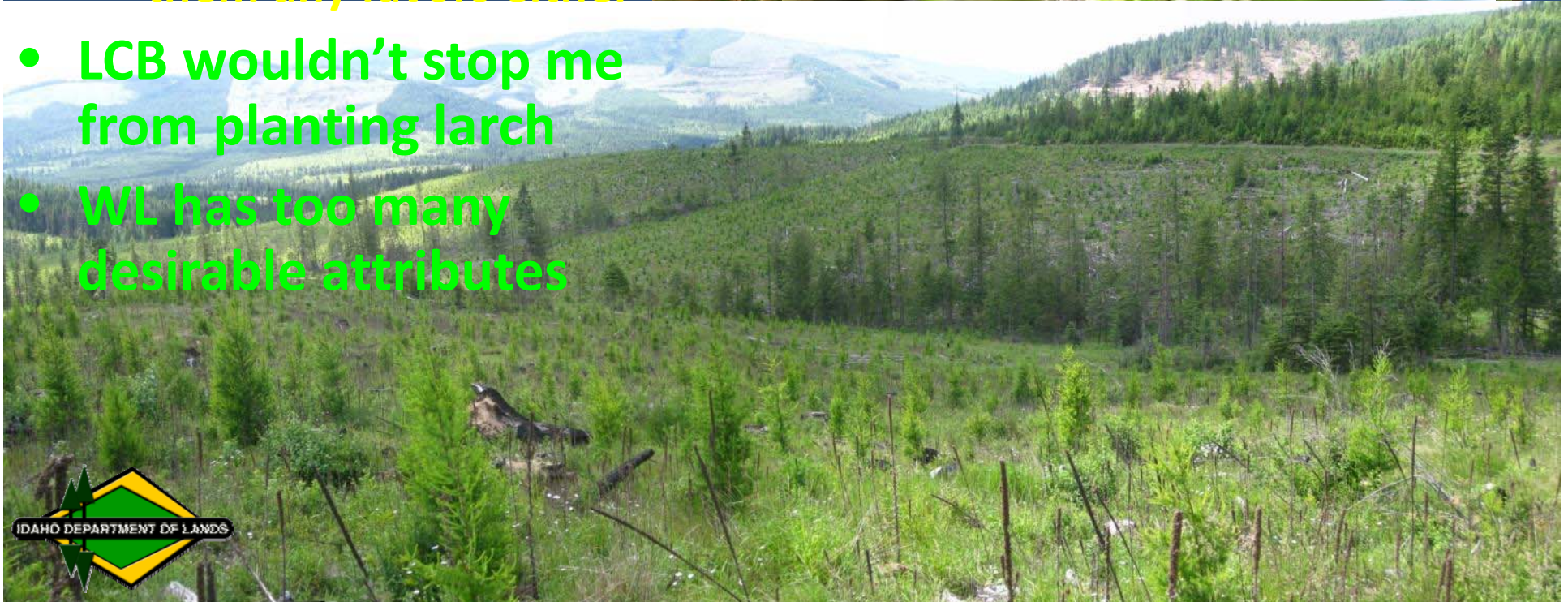


Larch Casebearer

- Damage can mimic needle diseases
- I haven't seen it kill trees
 - It probably doesn't do them any favors either



- LCB wouldn't stop me from planting larch
- WL has too many desirable attributes



Did You Ever Hear This Rumor?



Spokane Chronicle-October 8, 1987



Thirsty yellow jackets sting North Idahoans

By David Bond
Staff writer

They're not killer bees, but an unusually cranky crop of yellow jackets has infested the woods of North Idaho this year.

And contrary to popular rumor hereabouts, the U.S. Forest Service isn't the culprit.

A story making the rounds has the Forest Service releasing 10 trillion of the nasty wasps to dine on tree-eating moths and larvae, and humans.

Not true, says Wallace District Ranger Del Mitchell.

"We just go out in the woods and keep 'em stirred up," Mitchell

quipped. The Forest Service may sin aplenty, he said, but hatching yellow jackets in North Idaho forests isn't one of its misdeeds.

The wasps have been a particular hazard to loggers and firefighters this year because of dry weather, he said.

"When bees don't have moisture, they get upset," he said.

Some two decades ago, the Forest Service did try releasing a European wasp to graze on an evergreen-eating larva, Mitchell said.

Bags of wasp larvae were hung from a few select trees to hatch, in the hopes that they'd spread through the woods and wipe the

tree-eaters out.

Problem was, the moth larvae were so plentiful that the wasps had all they could eat without leaving the trees where they were planted.

Jerry Cobb of the Panhandle Health District's office in Silverton said this fall's bee-sting problem is aggravated by the yellow jackets' sluggishness brought on by cool nights.

"My personal experience is, there's more bees and they're hanging around longer. The bees are kind of dopey from the cold nights so they don't fly away as quickly, and you end up stepping on them or

leaning on them or something else, and they sting."

Cobb's agency doesn't keep statistics on bee stings, he explained, because "it's not a public health hazard."

"It's a personal health hazard, like bullet wounds."

Some home-remedy tips for combating the feisty attack-insects: When you're in the woods, carry toothpaste (white, generic — fluoride not necessary) and an allergy medication such as Benadryl. Spreading a little toothpaste on a fresh sting will suck some of the painful poison out of the wound

- moose
- sheep
- goat
- Upland Game
- turkey
- grouse
- chukar
- partridge
- pheasant
- quail

Answer:

Sorry for the delay in responding to your question. It sounds like a rumor, as yellow jacket populations tend to cycle up and down. You can always contact the local Forest Service office and ask them.

Answered on: October 28, 2013 - 11:55am

Western Spruce Budworm

- Mostly a problem in southern Idaho
 - Damage in the Panhandle until 2012
- Little damage in N. ID recently
- Will eat GF, DF, Spruce AND larch
 - Can damage WL terminals (clips them)

Western Spruce Budworm Damage Affects Form and Height Growth of Western Larch

WYMAN C. SCHMIDT AND DAVID G. FELLIN¹

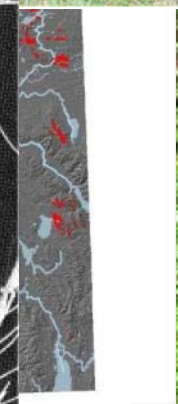
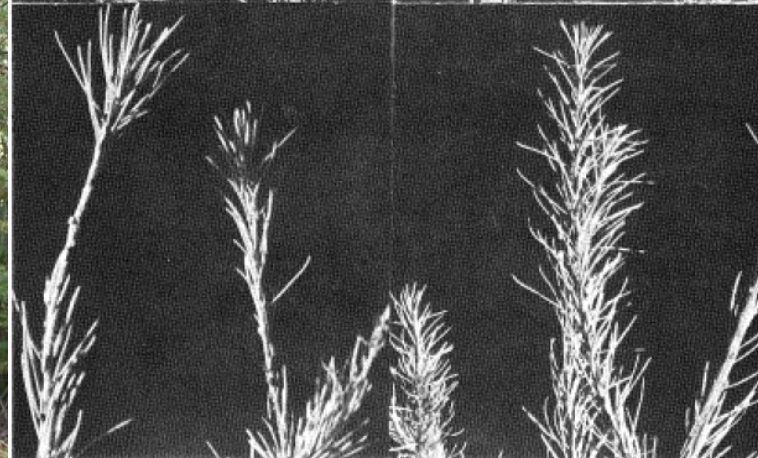
U.S.D.A. Forest Service, Intermountain Forest and Range Experiment Station, Ogden, Utah, 84401

Received October 26, 1971

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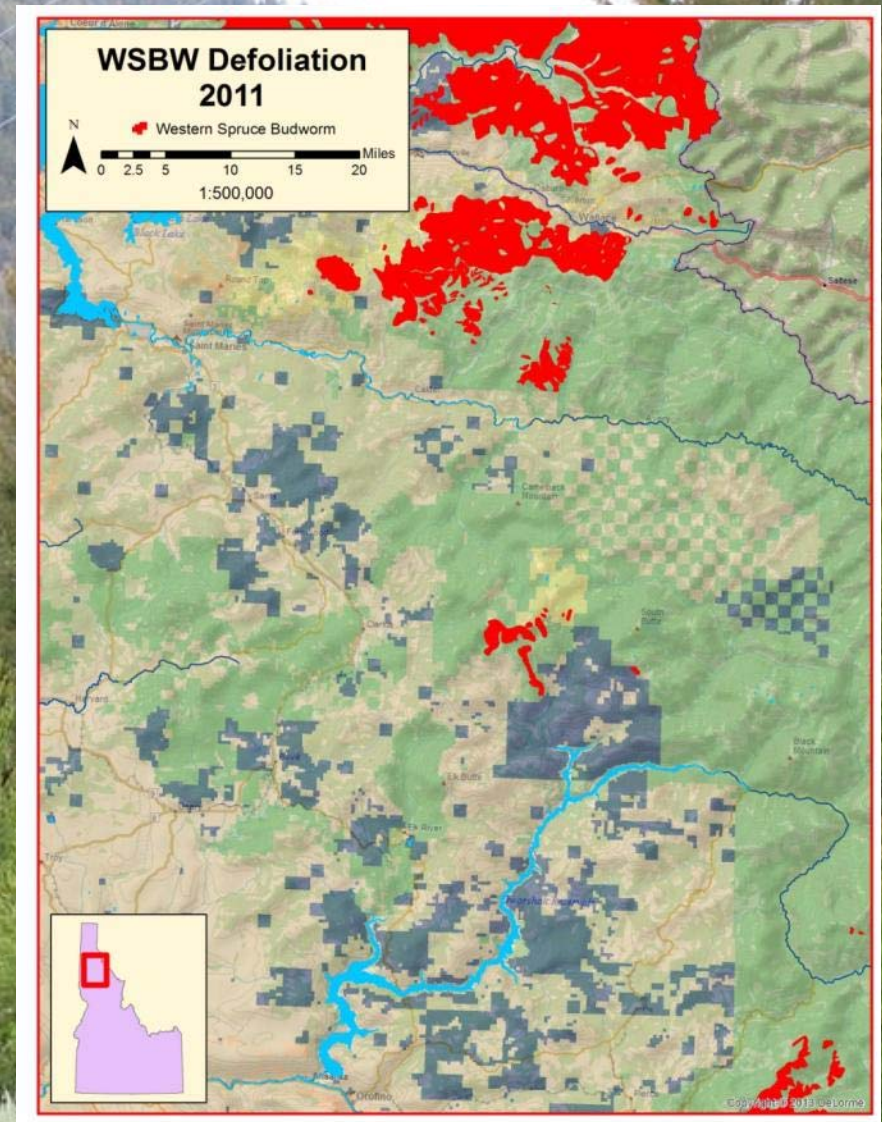


ffects form and
(atalis Freeman)
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other conifers;
5-year study in
eased annually,
shoot was the
growth at least
did not persist



Western Spruce Budworm

- Most of the action in Region 1 was on the Clearwater-Nez and the upper St Joe
- Most of that defoliation disappeared in 2014
- Scattered activity in the Upper Joe in 2015
- Keep your eyes out, WSBW can be unpredictable in R1



Western Pine Shoot Borer

- Causes distinctive terminal damage
 - “Shaving brush” appearance
 - Tunnels inside terminal
- Doesn't always kill terminal, causes height loss
- At one time there was an “Attract and kill” pheromone available



2013

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Secondary Bark Beetles

Scolytus monticolae in Douglas-fir

- Not considered a killer of healthy trees
- Typically feeds on :
 - Slash
 - Small stressed trees
 - Tops of larger down or dying trees
- Can cause problems during drought



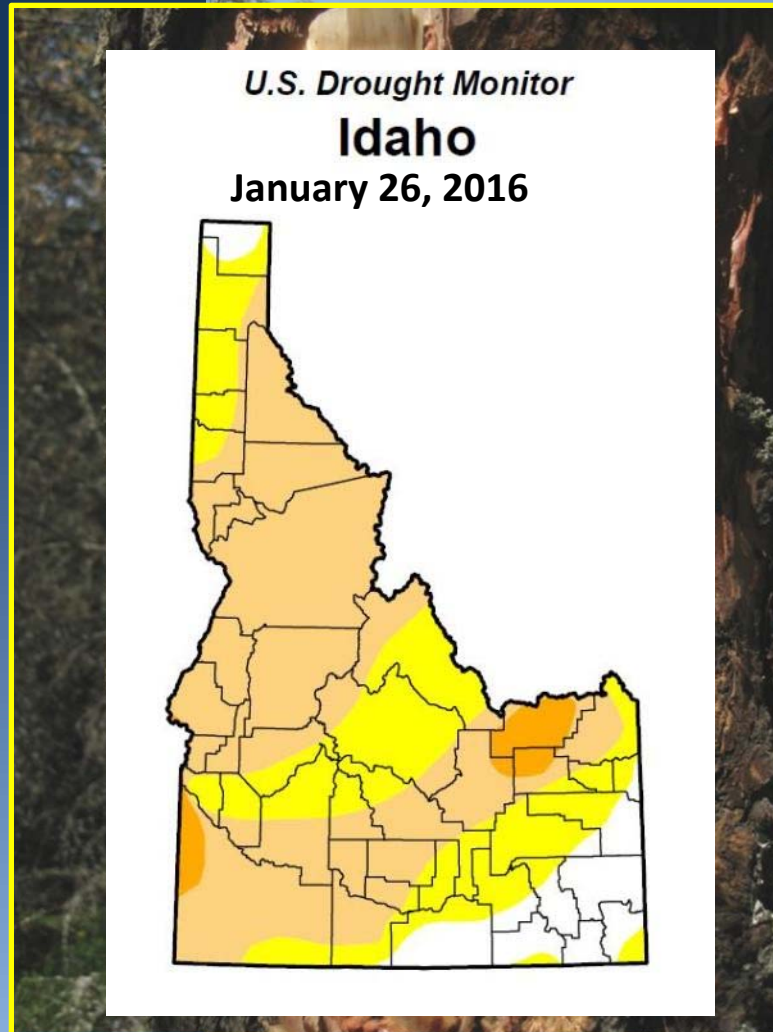
Secondary Bark Beetles in DF

- Harvest near Kendrick, small patch cuts
 - June-Oct 2014
- Slash piles & nearby trees infested
 - *S. monticolae*
 - DF engraver
 - DF pole beetle
- Mortality in understory & seed trees
- Identified as *S. monticolae*



Scolytus monticola

- Mortality continued into summer 2015
- Larger trees NOT infested with DFB
- Probably a result of drought stress



Wood Borers in Tree Tops

- Lodgepole pine 25-30 years old near Spirit Lake
- Initially, it looked like pine engraver
 - Very little *Ips* seen
- Tops were dead, lower bole still green
- LPP is the dominant species (cold pocket)



Cooley Spruce Gall Adelgid on Douglas-fir

- Causes galls on Engelmann spruce
- Not a serious pest on Douglas-fir
 - Complicated life cycle
- Small yellow feeding spots on foliage
 - Some distortion of terminals
- Probably wouldn't cause lasting damage
 - Root disease also on the site

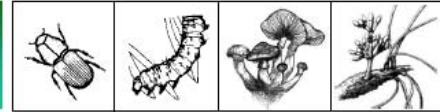


Adelgids on White Pine

- Transcontinental – In ID where E. Spruce & WWP occur
- Causes damage in the East
- Damage here looks like needle cast on WWP
- Very distinctive galls on Engelmann spruce
- Reports of mortality in Kootenai & Kaniksu NFs in 2014
- Keep your eyes out for **this one**

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Forest Health Protection



FHP Report 15-08

April 2015

Pine Leaf Adelgid, *Pineus pinifoliae* (Fitch) Found Damaging Western White Pine Plantations on Kootenai and Idaho Panhandle NFs

I. Blakey Lockman

USDA Forest Service, Northern Region, Forest Health Protection

Abstract

Unique damage was noted on planted western white pine on the Kootenai and Idaho Panhandle National Forests in 2014. Damage was generally confined to the lower crown and included branch flagging, green branches with swollen abnormal growth on branch ends, multiple years of red needles remaining attached, and resin droplets on affected branches reminiscent of white pine blister rust (*Cronartium ribicola* Risch). Scale-like insects were noted on symptomatic branches. The agent involved was identified as pine leaf adelgid (*Pineus pinifoliae* (Fitch)). Historical outbreaks of this insect have been recorded in eastern and western white pines. Possible management to minimize the impacts from this insect include preferentially removing spruce from impacted western white pine stands and continuation of the western white pine pruning program as planned. Informal monitoring is planned for 2015.

Introduction

Unique damage was noted on planted western white pine (WWP: *Pinus monticola* Dougl. ex D. Don) during a site visit to evaluate pruning opportunities in WWP plantations on the Kootenai National Forest in August of 2014. This damage was noted in several plantations, but the worst damage observed was located in the Getner Creek drainage about 10 miles south of Libby, Montana on National Forest lands. Similar damage was also noted by Monika Wood and other personnel on the Idaho Panhandle National Forests. They coded the damage "14-046 Pine leaf adelgid (sucking insect)" during their surveys of recently pruned and thinned stands southeast of Bonners Ferry, Idaho. This area is approximately 30 air miles northwest from the damaged stands south of Libby, Montana, and less than a mile from the Idaho/Montana border.

Pruning is generally done in WWP trees 15 to 25 feet tall, so the sites visited were limited to stands of this approximate size. Damage appeared to be confined to planted WWP; natural regeneration seemed relatively unaffected. Damage was generally confined to the lower portion of the mid-crown of trees - the very bottom one or two branch whorls were almost always green and symptomless (Figure 1). Symptoms within this zone of the crown included significant branch flagging, green branches with swollen,

United States
Department of
Agriculture

Forest
Service

Northern
Region

200 East Broadway
P.O. Box 7669
Missoula, MT 59807



Douglas-fir Needle Midge

- Usually an incidental pest of Douglas-fir
- Looks similar to Rhabdocline needle disease
 - Timing is wrong
- Saw a lot of it in 2015 on all sizes
- Can cause some defoliation in the

spring



ey



W. Strong

S. TUTTLOCK

5445589

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UGA2254008

Keep an Eye Out for These

Pine needle sheath miner

- Feeds on ponderosa pine
- Saw this at Kamiah PP plantation in 2009
- Mines at the base of needle fascicle
- Needles fall out during summer
- Plantation was ~ 25% infested, no lasting damage



Conifer Sawflies

Conifer Sawflies

- Many species, feed on most conifers
- Autumn ponderosa pine sawfly (*Neodiprion autumnalis*)
 - Can be damaging in pine plantations
- Observed an infestation near Harrison in 2008
 - Aerially sprayed
- Other species on DF, GF
- ...and western larch

Deformed shoots on WL

Dougl



Gouty Pitch Midge

- Infests ponderosa pine
- Feeds under bark on the twigs, forms resin pocket
- Can cause deformation or death of twigs
 - Capable of killing young trees



D. Owen

5387798

2015 Was a Smorgasbord

- LOTS of bark beetle activity!
 - Especially *Ips pini*
 - & WPB
- Blowdown & snowdown will bring challenges this year
- Drought will help weed out the wimpy and offsite
- Keep your eyes out for the unusual in 2016

WPB

Gran
Fel

Secondary BB killing
mature & sapling DF

We Never Recommend Doing This

Green pine firewood



Live trees



Diamond Lake Washington, November 20, 2015