2019 Forest Insect Trends
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Drought and climate change

Drought = extended **warm and/or dry days**

lack of consistent **precipitation** (+snowpack)

Drought email: [https://tinyurl.com/drought-report](https://tinyurl.com/drought-report)
Drought survey: [https://go.unl.edu/cmor_drought](https://go.unl.edu/cmor_drought)
Most damaging pests

<table>
<thead>
<tr>
<th>Pest</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>True fir infesting beetles</td>
<td>470,000</td>
</tr>
<tr>
<td>Pine infesting beetles</td>
<td>110,000</td>
</tr>
<tr>
<td>Doug-fir infesting beetles</td>
<td>77,000</td>
</tr>
<tr>
<td>Balsam woolly adelgid</td>
<td>16,000</td>
</tr>
<tr>
<td>Doug-fir tussock moth</td>
<td>14,000</td>
</tr>
<tr>
<td>Spruce aphid</td>
<td>7,200</td>
</tr>
</tbody>
</table>
Bark beetles

- Opportunistic, some eruptive
- Chemical signaling
- Feeds on phloem/cambium
- Introduces fungi
- Affects water and nutrient uptake
Fir engraver

Biology

• Attacks all diameter true fir
• Often secondary in root rot or dry sites (<25”/yr)

Management

• Avoid planting fir in dry or sun-exposed sites
• Manage root rot
Ips beetles

**Biology**
- Attacks 3-8” pine (small trees, or tops & branches)
- Prefers fresh slash

**Management**
- Timely and sufficient PCT
- Avoid overstocking pine on dry or scabby sites
- Timely management of slash
Slash → Ips beetle

Oct-Dec. = scatter on ground

or

Chip or burn before April or within 2 months

April – September: slash infested

2 months: next generation attacks trees
Western pine beetle

**Biology**
- Attacks large ponderosa
- Prefers less vigorous or overly mature trees

**Management**
- Removal of damaged trees or trees that are struggling
- Manage for *Ips*
Douglas-fir beetle

Biology
- Attacks >10” dbh Doug-fir
- Prefers blowdown
  (>5 down large trees per acre at risk)

Management
- Remove downed trees / apply MCH before 1\textsuperscript{st} or 2\textsuperscript{nd} April after storm
- Remove struggling trees
- Thin dense stands
Storms ➔ Douglas-fir beetle

Winter 2019: storm blowdown

April 2020: DFB attacks infests down trees

April 2021: second generation attacks standing trees
Douglas-fir beetle: MCH repellent

- Apply before April
- 1 blister pack per tree in a grid (~30/acre)
- $80-100/acre
- Also in flake form for aerial application
- More efficacious when paired with silvicultural management
Balsam woolly adelgid

- Exotic but established
- Attacks true fir
- Mostly in inaccessible areas
- Avoid transport on the small scale
Douglas-fir tussock moth

- Deschutes NF
- Fremont-Winema NFs
- Malheur NF
- Mt Hood NF
- Ochoco NF
- Rogue River NF
- Siskiyou NF
- Umatilla NF
- Umpqua NF
- Wallowa-Whitman NF
- Warm Springs IR

Graph showing average moth numbers from 2010 to 2019 for different national forests and reserves in Oregon.
Spruce aphid

- Exotic but established
- Follows mild winters
Other temporal insect pests

- Pine sawflies near Chemult Oregon
- Pine needleminer moths in Warner range
Western redcedar decline

- Unknown cause but monitoring
- Oregon through Canada
- Mostly pockets with thinning crowns
- Often along streams
Resources

- ODF, OSU, USFS Forest Health experts
- ODF Forest Health Factsheets: http://tinyurl.com/odf-foresthealth
- Forest Health Highlights
- OSU forestry extension guides