7.1 MILLION ACRES WITH DEAD TREES
5.4 MILLION ACRES WITH OTHER TREE DAMAGE

SOUTHERN PINE BEETLE

- A major pest of southern yellow pine forests that greatly influences pine ecology and timber production.
- Mortality associated with Southern Pine Beetle declined across its known range south wide.

SUDDEN OAK DEATH

- Tree disease which kills several oak species and tanoak in California and Oregon.
- Continues to spread northward in infected areas. The EU1 strain is the primary focus in Oregon.

EMERALD ASH BORER

- Ash trees in urban areas and rural settings are being devastated.
- No new states in 2019 but it continues to spread to additional counties in infested states.

FIR ENGRAVER

- Significantly impacting fir species on the west coast.
- 1.9 million acres with mortality in California.

SPRUCE BEETLE

- Attacks most spruce trees across its range.
- Alaska reported 133 thousand acres with mortality which is down from 2018.

EMERALD ASH BORER

- Ash trees in urban areas and rural settings are being devastated.
- No new states in 2019 but it continues to spread to additional counties in infested states.

BEECH LEAF DISEASE

- A newly identified beech disease caused by a nematode.
- Beech Leaf Disease (BLD) was reported for the first time in Connecticut in 2019.

GYPSY MOTH

- Gypsy moth defoliation can result in reduced annual growth, canopy dieback, and death.
- 198 thousand acres with defoliation in Michigan and 154 thousand acres with mortality in Connecticut.

ACTIVITIES FOREST HEALTH PROTECTION SUPPORTED

<table>
<thead>
<tr>
<th>SUDDEN OAK DEATH</th>
<th>SOUTHERN PINE BEETLE</th>
<th>EMERALD ASH BORER</th>
<th>FIR ENGRAVER</th>
<th>GYPSY MOTH</th>
<th>SPRUCE BEETLE</th>
<th>BEECH LEAF DISEASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream detection and treatments in targeted areas to slow-the-spread</td>
<td>Suppression of active infestations and thinning forest for prevention</td>
<td>Provide technical assistance and outreach</td>
<td>Surveying, suppression, and developing management options</td>
<td>Eradication, suppression, and slow-the-spread; (promote early intervention)</td>
<td>Pest suppression, detection, management, and treatments</td>
<td>Causal agent surveys were performed and are on-going in the east</td>
</tr>
</tbody>
</table>

TREE MORTALITY SURVEY TRENDS 2010-2019
2019 INSECT AND DISEASE SURVEY
WATERSHIRDS WITH TREE DAMAGE

- Sudden oak death
- Southern pine beetle
- Emerald ash borer
- Fir engraver
- Gypsy moth
- Spruce beetle
- *Beech leaf disease
- **Other damage

*Displayed as watersheds in counties reported to have beech leaf disease.

**Includes damage from western spruce budworm, hemlock looper, hemlock sawfly, pinyon ips, mountain pine beetle and many other less significant pests.