



# Storms and Forest Health

## Forest Health Fact Sheet

March 2017



Blowdown from 2016 winter storms in Lane County

Winter storms are a naturally occurring phenomena in our region's forests but they can have many negative impacts:

- Increased susceptibility to insects, pathogens, etc.
- Fire risk from added ground fuels
- Habitat loss for fish and wildlife
- Damaged or blocked roads and culverts
- Safety hazards for landowners and forest workers
- Reduced aesthetic value
- Economic losses

### Damage

Winter ice storms, strong wind events, floods, etc. can cause a variety of damage such as “ring shake” (i.e., splits along annual rings), frost cracks and splits, broken branches and tops, damaged buds and foliage and snapped or uprooted trees. Additionally, large openings created by blowdowns leave standing trees exposed to their own risk of blowdown, and debris created by storms adds to wildfire fuel loads.

Damaged and downed trees also provide opportunities for opportunistic insects and diseases to increase in intensity and/or spread, further reducing stand resiliency.

### *Pathogens*

Cracks and breaks create openings for fungal spores to enter wood and initiate decomposition. Trees already partially decayed by fungus are at even more risk of failure following a storm - be aware of hazard risks.

### *Insects*

Insects such as bark beetles and wood boring beetles take advantage of stressed and damaged trees and can greatly reduce the merchantability of timber.

Douglas-fir beetle is a bark beetle that attacks large-diameter (>10”) Douglas-fir, and may outbreak after blowdown events - particularly in mature stands or those stressed by drought or root rot. A common rule of thumb is: three downed, large-diameter Douglas-fir per acre can increase beetle populations enough for them to kill an additional 1-2 trees/acre the following year. Outbreaks from Douglas-fir beetle are localized and may persist for 1-3 years. Salvage downed, large-diameter Douglas-fir before the first April after a blowdown event to prevent



Examples of damage following a storm: 1) ring shake, 2) cracks, 3) beetle-vectored stain

Christine Buhl, ODF

beetles from colonizing OR salvage before the second April to prevent beetles from leaving the downed trees to attack standing trees. If salvage is not possible or must be delayed consider applying the repellent pheromone MCH.

*Ips* species bark beetles attack small-diameter pine (3-8") slash and branches and tops of standing trees, and may outbreak after winter storm events that occur after January. Timely management of pine slash after storm events can prevent potential outbreaks.

Although bark beetles stay under the bark and do not tunnel into wood, they can reduce merchantability of salvaged trees by introducing fungal stains into the wood. These stains can spread into wood in as little as a few weeks after beetles colonize trees. Expedient salvage prevents both beetle infestation and introduction of staining and decaying fungi.

Wood boring beetles are mostly secondary and often follow bark beetle attacks. These beetles typically bore directly into the wood and some (e.g., ambrosia beetles) also introduce fungal stains, which reduces merchantability of salvaged trees. Most wood boring beetles start attacking in summer, although, many different species of ambrosia beetles attack almost year-round.

## Management

Salvage operations to remove downed and damaged trees should also consider thinning overstocked stands and removing less vigorous trees to improve stand resiliency in anticipation of building insect populations. When planning salvage operations:

- Avoid doing work when soil is wet, wounding leave trees or leaving slash or logs behind during operations
- [Forest Practices Act](#), Threatened and Endangered species regulations and burning regulations still apply
- <3 trees/acre of large-diameter downed trees or standing trees with broken tops can be retained for wildlife without eliciting an insect outbreak
- Healthy trees with 30% or more of their crown intact

### More information:

Oregon Dept. of Forestry, Forest Health  
<http://tinyurl.com/odf-foresthealth>  
2600 State St. Bldg. D, Salem, OR 97310  
503-945-7200

## Resources

- ◆ [Slash Management, MCH, Douglas-fir Beetle, Ips Beetle facts sheets](#) (ODF Forest Health)
- ◆ [Winter Storm: Reducing Ice Damage to Trees](#) (ODF)
- ◆ [Tree First Aid After a Storm](#) (OSU Extension)
- ◆ [Can These Trees be Saved](#) (OSU Extension)
- ◆ [Forest Storm Damage](#) (WA DNR)

can survive and may be retained

- Funds may be available from [ODF Grants & Incentives](#) program to cost-share operations that involve fuels reduction or bark beetle outbreak prevention.

In urban areas:

- Contact your power company if trees are near powerlines
- Contact an International Society of Arboriculture (ISA) -certified arborist if you are unable to do the work yourself
- Resist the urge to over-prune or top trees

Look up! Be aware of immediate safety hazards to people and structures (buildings, roads, culverts, power lines).



Christine Buhl, ODF

Snag tree utilized by wildlife.

### Other references:

USFS Forest Health Protection  
[www.fs.usda.gov/goto/fhp/fidls](http://www.fs.usda.gov/goto/fhp/fidls)

OSU Forestry Extension  
<http://extensionweb.forestry.oregonstate.edu/>