Created snag dynamics and influence on cavity-nesting bird communities over 25 years in Western Oregon
Why are snags important?
There are two main groups of cavity-nesting birds that rely on snags.

**Primary cavity-nesters**

- **Strong excavators**: Drilling bill

- **Weak excavators**: Picking bill

**Secondary cavity-nesters**

- (Images of birds and owls)

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*Images courtesy of SandersReport.com*
Snag abundance has been significantly reduced.
Snags can be created from live trees where natural snags are scarce.
Relatively little known about the long-term structure and use of created snags.
Our study evaluates the effectiveness of created snags at providing habitat for birds after 25 years.
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**Harvest Treatments**
- Group selection treatment
- Two-story treatment
- Clearcut with retained green trees

**Snag Creation**
- Scattered
- Clustered
Project Objectives:

1. What are the characteristics of snags after ~25 years?
2. How are birds using snags currently?
3. How has use and condition of snags changed over time?
Project Objectives:

1. What are the characteristics of snags after ~25 years?
2. How are birds using snags currently?
• **Snag persistence:** Whether or not a snag is still standing (≥2.5m).

• **Cavity cover:** % of snag covered in cavities
Proportion of snags still standing after 25 years = \(~90\%\)
All snags had cavities, mean cavity cover across treatments = 11%.
Project Objectives:

1. What are the characteristics of snags after 25 years?
2. How are birds using snags currently?
Focal Observations

2015
• 135 snags
• 306 hours

2016
• 204 snags
• 467 hours
Where is the active wildlife cavity?
The proportion of snags used for nesting = \(~10\%\).

<table>
<thead>
<tr>
<th>Year</th>
<th>Nests 2015</th>
<th>Nests 2016</th>
<th>2015 Nest</th>
<th>2016 Nest</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>12 nests</td>
<td>20 nests</td>
<td>1 nest</td>
<td>1 nest</td>
</tr>
</tbody>
</table>
Point Counts and Call Play-back
Primary cavity-nesting species were present in all harvest types.

<table>
<thead>
<tr>
<th>Species</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red-breasted sapsucker</td>
<td>58%</td>
</tr>
<tr>
<td>Northern flicker</td>
<td>46%</td>
</tr>
<tr>
<td>Hairy woodpecker</td>
<td>42%</td>
</tr>
<tr>
<td>Pileated woodpecker</td>
<td>27%</td>
</tr>
<tr>
<td>Downy woodpecker</td>
<td>4%</td>
</tr>
</tbody>
</table>
Take home messages

• Snags are standing but decayed.
• Snags have been used for 25 years.
• Snags still provide some habitat for weak excavators after 25 years.
Acknowledgements

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Photo Credits
- Niels Garlick
- Vivian Phan
- Hannah O’Leary

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Natural snag densities were high, but sizes were much smaller than created snags.
Objective 1: Snag condition

Broken
Objective 1: Snag condition

Bark cover

Overall mean bark cover was 82% and varied among treatments.
Objective 1: Snag condition
Bark cover
Objective 1: Snag condition

Bark cover
Objective 2: Bird use of snags
Focal observations

Nesting has decreased from 20% in 2001 to ~10% in 2015/2016.
Objective 1: Snag status

Persistence

P-value = 0.01
Objective 1: Snag status

Cavity cover

Group selection vs. Clearcut
Group selection vs. Two-story
Two story vs. Clearcut

P-value = <0.001
• 22.5% of snags (n = 46 out of 204 focal snags) were used at some point as foraging substrates or nesting substrates. Only about 1 hr of other use observations total and 47 min foraging. (2016)