Characterizing Northern Goshawk (*Accipiter gentilis laingi*) Nesting Sites on Vancouver Island

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Outline

• Species summary
• Project outline and participants
• Results
  ▪ Potential implications
Northern goshawks occupy most of the Northern hemisphere

In BC there are 2 subspecies: *A.g. laingi* (coastal) and *A.g. atricapillus* (interior)

Coastal population in BC estimated to be ~1000 birds
Coastal subspecies A. g. laingi is Red-listed in BC, Threatened under SARA

Interior subspecies A. g. atricapillus is not considered at risk

Genetics project underway with BC gov’t, industry, GenomeBC, and UBC

  • Won’t have effects on the ground for years
Northern goshawk, coastal subspecies

- Recommended habitat management:
  - 200ha (495ac) breeding area, containing all known nests
- Current recovery plan drafts will have implications for forestry due to inclusion of foraging areas and increase in number of protected territories
Northern goshawk, coastal subspecies

Potential 3900ha (9600ac) forage management area

Current 200ha (495ac) proposed reserve

3.5km (2.2mi)
• TimberWest monitors +/- 40 territories annually
• In 2016, TimberWest had 9 active nests
  - 2015 = 9
  - 2014 = 15
  - 2013 = 12
• All nests were in 2nd growth stands
• BC coastal forest companies have maintained information on goshawk nesting sites since mid-1990s

• In recent years, companies were reluctant to share data – this has contributed to some forest types being underrated as habitat

• Needed to get data out without compromising confidentiality
• Participant companies organized and submitted nest tree and site data
  • NCASI – guidance role

• Total dataset = 347 nests
  • 177 confirmed as being used by goshawks
  • 170 suspected as goshawk nests
- Statistical summaries by dbh, nest height, tree height, stand age, elevation
- \(t\)-tests to compared:
  - Confirmed and assumed nests
  - Second growth nests and mature/old nests
- Re-examining statistical analysis
• Differences between confirmed and assumed in: tree height, elevation and stand age

![Graph showing differences in tree height, elevation, and stand age between confirmed and assumed nests.](image)
## Nest sites project - results

Confirmed nests:

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>SE</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>dbh (cm)</td>
<td>168</td>
<td>68.3</td>
<td>2.6</td>
<td>18.5</td>
<td>183.0</td>
</tr>
<tr>
<td>Nest height (m)</td>
<td>159</td>
<td>19.8</td>
<td>0.5</td>
<td>6.6</td>
<td>41.5</td>
</tr>
<tr>
<td>Tree height (m)</td>
<td>159</td>
<td>38.5</td>
<td>0.9</td>
<td>16.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Stand age (yr)</td>
<td>177</td>
<td>183.6</td>
<td>11.3</td>
<td>38</td>
<td>722</td>
</tr>
<tr>
<td>Elevation (m)</td>
<td>177</td>
<td>355.7</td>
<td>11.4</td>
<td>57</td>
<td>822</td>
</tr>
</tbody>
</table>
## Nest sites project - results

<table>
<thead>
<tr>
<th>Confirmed nests:</th>
<th>0-120 years old.</th>
<th>&gt;120 years old.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Second-growth</strong></td>
<td><strong>Mature and old forest</strong></td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>98</td>
<td>79</td>
</tr>
<tr>
<td>DBH (cm)</td>
<td>$49.5 \pm 2.1$</td>
<td>$91.2 \pm 3.7$</td>
</tr>
<tr>
<td>Nest height (m)</td>
<td>$17.3 \pm 0.5$</td>
<td>$22.7 \pm 0.7$</td>
</tr>
<tr>
<td>Tree height (m)</td>
<td>$32.9 \pm 0.8$</td>
<td>$44.9 \pm 1.3$</td>
</tr>
<tr>
<td>Stand age (yr)</td>
<td>$67.3 \pm 1.9$</td>
<td>$328 \pm 12.5$</td>
</tr>
<tr>
<td>Elevation (m)</td>
<td>$313.1 \pm 13.5$</td>
<td>$408.6 \pm 17.6$</td>
</tr>
</tbody>
</table>

* $a$ 0-120 years old.  
  $b$ >120 years old.
Distribution across stand age depends on where you look:

McClaren et al, 2015

Hudson et al, unpublished
Nest sites project – potential implications

- Broader definitions of suitable habitat
- Acknowledgment of forest companies’ management efforts
- Exclusion of some questionable nests from leave area design
- More analysis of this dataset
Current status:

- Working on second submission based on 2 thorough reviews
- Reconsidering analysis to acknowledge correlation between variables
- Need to clarify the limitations of the dataset in terms of inference
• Dave Lindsay, TimberWest
• Darren Sleep, Jake Verschuyl and Kirstin Vice at NCASI
• John Deal and Sue McDonald, Western Forest Products
• Island Timberlands
• Many technicians and summer students – the data collectors
Questions?

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