Modeling Land Use Change in the CLAMS Region

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Land Use Modeling Region
Projected Population in Western Oregon

Population Density and Commercial Forest Management in Virginia


Probability

People per square mile

0 50 100 150 200 250

0 0.2 0.4 0.6 0.8 1

20 people/sq. mi. = 0.75

45 people/sq. mi. = 0.50

70 people/sq. mi. = 0.25

Building Density and Planting Following Harvest in Western Oregon

![Graph showing the relationship between building density and planting probability. The graph includes two lines: one for Industry and one for NIPF. The x-axis represents buildings per square mile, ranging from 0 to 60, and the y-axis represents probability, ranging from 0.0 to 0.35. The Industry line is red and decreases from 0.35 to 0.05 as building density increases. The NIPF line is green and decreases from 0.25 to 0.05 as building density increases.]
Hypothetical Impacts of Humans in Forests

- Direct loss of forestland
- Changes in forest management
- Impacts on wildlife habitat
Research Objectives

• How will humans be distributed across the landscape in the future?

• Account for potential impacts of humans on:
  – Timber production
  – Habitat viability
Building Densities in Western Oregon, 1995

Buildings per square mile

- 0
- 1-20
- 20 – 64
- 64 - 640 (Low Density)
- > 640 (Urban)

Source: OR Dept. of Forestry.
Gravity Index of Development Pressure

Index = \sum_{j}^{J} \frac{\text{Population}_j}{60'} - \frac{\text{Time}_j}{60'}

J = \text{Number cities within 60'}
Projected Building Density Classes

Buildings Per Square Mile

- 0
- 1-20
- 20 - 64
- 64 - 640 (low density)
- > 640 (urban)
## Precision Verses Accuracy

<table>
<thead>
<tr>
<th>Ending building density per 80 acres</th>
<th>% in class</th>
<th>% correctly projected</th>
<th>% correctly projected within one building</th>
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<td>51</td>
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