Kirk Hanson
kirk@nnrg.org
(360) 316-9317
PNW Westside Forests

- Very Young (~0-30 yrs)
- Young (~30-60 yrs)
- Maturing (~60+ yrs)
Management Objectives

• A healthy forest
• Periodic income
• Wildlife
• Privacy
• Aesthetics
• Recreation
• Stewardship
• Long-term investment
FOREST ASSESSMENT

0-30 YEARS

Access
Habitat
Wildlife use
Stocking
Brush comp.
Browse
Invasive spp.
Management Actions
0-30 years

1. Replant large gaps
2. Cut back competing vegetation
3. Cage seedlings
4. Remove invasive species
5. Install bird nesting boxes
6. Inspect and repair forest access roads
7. Pre-commercially thin alder thickets
8. Pre-commercially thin to favor crop trees
9. Monitor!
Pre-Commercial Thinning Strategies

Thinning “from below”

Remove:

1. Smallest diameter
2. Most suppressed
3. Trees with least live crown (<30%)
4. Defective trees (broken tops, wane, forked, etc.)
5. Non-preferred species
6. Spacing
7. “Release” understory trees
FOREST ASSESSMENT

30 - 60 YEARS

Stocking
Crown ratio
Health
Habitat
Merchantability?
Figure 3-2. Live-crown ratio of a tree.
Continuous Cover Forestry

Managing Multi-Cohort Stands

Thinning
Reduce density of a cohort to maintain or improve growth and crown development

Remove Overstory
Harvest trees for wood & revenue; and open growing space for lower cohorts

Regeneration
Establish a new cohort

Approaches
- Individual Tree Selection
- Group Selection
- Thin from below
- Free thinning
- Variable density thinning
- Variable retention
Cutting Cycle

1. Age 40
180 TPA
BA 120

2. Age 60
180 TPA
BA 180

3. Age 60
90 TPA
BA 120

4. Age 80
90 TPA
BA 160
Management Actions
30-60 years

1. 1st & 2nd commercial thinning
2. Replant understocked areas, disease gaps, hardwood patches
3. Underplant following commercial thinning
4. Create habitat structures
   a. Downed logs
   b. Habitat piles
5. Remove invasive species
6. Pruning
7. Monitor!
FOREST ASSESSMENT

60+ YEARS

Stocking
Crown ratio
Height-to-diameter
Spp. composition
Understory
Habitat
Merchantability
Disease
Measuring Height to Diameter Ratio

Height (Feet) / Diameter: DBH (Feet)

\[
\frac{80 \text{ (feet)}}{18'' \text{ dbh}} = \frac{80'}{1.5'} = 53
\]

\[
\frac{80'}{12''} = \frac{80'}{1'} = 80
\]
No Mngt or past Commercial Thin
1. Thin Overstory
2. Establish understory

Stage 1

ITS w small gaps or VDT
1. Maintain release potential of understory
2. Harvest portion of overstory

Stage 2

Stage 3

Group Selection
1. Harvest most of overstory
2. Release understory
Understory Establishment – Initiation of Two-cohort Stand

Single cohort stand

dispersed
grouped

Transformation to two-cohort stand
Group Selection Structure Types

- Regeneration
- PCT
- Matrix
- Thinning
Environmental Quality Incentives Program (EQIP)

Timber Stand Improvement
• Pre-commercial thinning
• Inter/Under-planting
• Pruning
• Increasing species diversity
• Root rot mitigation
• Remove invasives
• Stand release
• Forest slash treatment
• Reforestation
Wildlife Habitat Enhancement

• Planting fruit & nut trees/shrubs
• Bird boxes
• Snags and downed logs
• Habitat piles
• Increasing tree/shrub diversity
• Elk forage
• Streamside planting
EQIP Scenario #1
0-15 years

1. Forest management plan: $1,300
2. Pre-commercial thinning: $180/acre
3. Replant gaps
   1. Site prep: $225/acre
   2. Planting conifers: $0.90
   3. Tree cages: $1.48
   4. Post-plant weed control: $0.45
4. Seedling release: $135.50/acre
5. Replant margins with wildlife trees/shrubs
   1. Site prep: $225/acre
   2. Planting bareroot trees/shrubs: $2.07
6. Invasive species control & replant
   1. Hand slash invasives: $225/acre
   2. Site prep for planting: $135/acre
EQIP Scenario #2
15 – 30 years

1. Forest management plan: $1,300
2. Habitat piles & downed logs: $90
3. Snags: $90
4. Bird boxes: $45
5. Species diversification:
   1. Site prep: $225/acre
   2. Planting conifers: $0.90
   3. Planting hardwoods: $2.07
   4. Tree cages: $1.48
   5. Post-plant weed control: $0.45
6. Pruning: $112.50